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PRACTICAL OBSERVATIONS

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ON

CHOLERA ASPHYXIA,

COMMUNICATED IN A REPORT TO THE GREENOCK BOARD OF HEALTH, AS
THE RESULT OF A MISSION TO THE INFECTED DISTRICTS.

With an Appendix.



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NEW-YORK:

PETER HILL, NO. 94 BROADWAY.

GREENOCK:

R. B. LUSK, AND THE OTHER BOOKSELLERS;
DAVID ROBERTSON, GLASGOW; OLIVER & BOYD, AND ADAM BLACK, EDIN
BURGH; AND HAMILTON, ADAMS & CO., LONDON

1832.



PRACTICAL OBSERVATIONS

ON

CHOLERA.

REPORT TO THE GREENOCK BOARD OF HEALTH.

IN obedience to your commands, I proceed to lay before you an account of my mission.

Learning at Edinburgh that the disease had increased at Tranent, I proceeded thither, and had there an opportunity of observing and taking accurate notes of the cases of 29 people labouring under Cholera Asphyxia. In returning through Musselburgh next day, I learned, what was not then known in Edinburgh, that the disease had broken out the day before in Musselburgh and the neighbourhood, and affected no less a number than 26 victims.

By the kindness of Mr. Moir, Surgeon, the amiable "Delta" of Blackwood's Magazine, I had an opportunity of examining many of these cases, and commencing my dire apprenticeship in the knowledge of this disease, by witnessing the living corpses of a mass of human beings, who the day before had been as healthful and robust as myself; and who were now prostrated in the lowest stage of human existence. With but very few exceptions all these unfortunates were in the state of collapse; pulseless, except by careful examination at the artery in the neck; cold as marble, even in the mouth; their breath cold, their voice a whisper, their fingers corrugated, their countenance livid, their nails leaden-coloured, like a drowned person's; in general their minds serene, composed, and sane; and, in short, having only some of the indications of vitality, so faintly traced as hardly to be perceptible, impressing one with more melancholy feelings than the contemplation of death itself.

It was evident to me, from the eventful experience of these two days, that little was to be learned of the right treatment of this disease in Musselburgh and Tranent. The practitioners were in dismay, and knew not what hand to turn to. Their remedies were as various as they were uncertain; and I retired from the scene, where the *Opprobrium Medicinæ* stared me in the face, and taught me an impressive lesson of how poor a thing our boasted art is when God is against us. Illness persuaded me to go no farther: the love of my country and of my townsmen, who have so

liberally supported me for half a life time, called on me to proceed to a place where the disease had long existed, where panic had subsided, and where I had heard that British energy, and British skill, and British science, had been brought to bear upon this terrible complaint. I proceeded next morning to Newcastle; and how rejoiced was I to find, after a single inspection of their hospitals, the disease managed upon a correct system, the medical attendants calm and philosophical, the indications of cure flowing out from premises easily to be understood; and all that was obscure, mysterious, and empirical, in Tranent and Musselburgh, was now dependant on rules of science easily comprehended.

Accidental circumstances early introduced to my acquaintance all the practitioners of Newcastle; and I was not many days in their city till they poured upon me a flood of knowledge. I had now the most extensive opportunities of witnessing the disease, not only in Newcastle, but in the neighbouring villages, and with unfeigned gratitude do I acknowledge the generous liberality of the Newcastle practitioners.

Addressing laymen, as I have the honour to do, it will be difficult to speak of the various stages of this disease with that plainness of language, yet accuracy of description, which may be necessary to give a full and precise account of the distemper. But when I consider those to whom I address these observations, and know that every one here is an educated man, I shall not be afraid to attempt the description. From the very extensive opportunity of induction which I enjoyed, I proved, before I was long in Newcastle, that Diarrhœa in this country *always* precedes Cholera Asphyxia; that this Diarrhœa is *always* a curable complaint, and consequently that this formidable disease, the ways of which were wrapped in mystery, and inspired us with no feelings but gloom and despair, may now be calmly viewed by the eye of philosophy and common sense, as a malady, the secrets of which are open to us, and the contrôl of which we have in our hands. Eternal blessings be to him who has thus indicated a way, by which our suffering race have found out a passage of escape from this pestilence, which hitherto "walked in darkness." While humbled before the dread vengeance of his omnipotent arm, let us yet rejoice in that bountiful benevolence, which has suffered us not to perish, but has given us the prospect of further days to serve him and to honour him.

Hitherto men even very conversant with the subject, had only arrived at the conclusion, that Diarrhœa frequently precedes Cholera; but enlarged opportunities of induction have enabled me to demonstrate that Diarrhœa *always* precedes Cholera. I am prepared for the appearance of those in the prints, and in private life, who will announce,—we knew all this before. I have only to say firmly, yet I hope it will not be understood disrespectfully to any, that if they did I am ignorant of it. Their knowledge was partial as it was inutile. What layman ever heard of premonitory symptoms *here*, till I called their attention to the important subject?

I will venture to say to these invidious cavillers, to what purpose did our knowledge tend? The fact half known, and half announced, was scattered in handbills, and buried in treatises purely professional. I felt it was my duty to reduce the facts of this important matter to a demonstration. I threw myself into a post-chaise, and for a week did I toil from the house of one practitioner to that of another, till at last, by their frank and manly liberality, I was able to announce to the friends of science, of truth, and humanity, that Diarrhœa *always* precedes Cholera. Their certificates extend over a mass of more than three thousand patients. The largest employed and the most intelligent of the practitioners of England who have treated this disease, speak always determinately on the subject, that Diarrhœa invariably precedes Cholera. Every man who kept an accurate note-book speaks determinately. They all agree as to the great generality of the cases, and not one of them was able to announce that a *bona fide* case ever occurred without premonitory symptoms. I now submit these certificates to you, with the addition of fourteen testimonials from the great majority of the Scottish practitioners who have now had six weeks experience of the disease. I have experienced even in Greenock, where I could have least expected illiberality and jealousy, attempts to undervalue this portion of my labours. I ask these parties in reference to their own knowledge, and its consequences, *cui bono*? Did we ever hear this *general* fact plainly announced *to the people*, or at all proposed to be generally acted upon for great and national purposes? Every surgeon's apprentice in Newcastle knew the fact of Diarrhœa frequently preceding Cholera. I claim only the merit of having extended that partial knowledge to a general law; and, having asked my country to avail themselves of its advantages, I call upon all lovers of their country, and all friends of humanity—I appeal to every father, son or brother, come forward quickly, assist me to snatch your countrymen and relatives from destruction. I have propounded to you a simple mode by which you can effect this. It is inexpensive, is attended with no difficulties or dangers, it needs only the hearty co-operation of all classes in a simple civic effort to effect a great purpose.

I may, in explanation of my letter to the Privy Council, which I had the honour of laying before you at your meeting of the 21st inst., say, that to avoid indelicacy in the inquiries of the head-men proposed, I would appoint a head-woman also to every ward; and in some localities, such as compact country districts, I would effect the purpose by stipendiary medical men, whose duty it shall be to inspect their whole districts daily, or at least every two days,—in the proximity of affected places certainly, daily. Nor would I dictate to communities the extent of the wards, of which they must be, in their own localities, the best judges. If we adopt not this plan of subdivision, and of watching the premonitory symptoms, we leave our people a prey to this ruthless destroyer. We will witness their decimation like the Newburn and Musselburgh victims, and we will have to mourn when it shall be too late, the

luckless fate of thousands of widows and of orphans. But follow my advice; paternally watch over your people, adopt the simple expedient of subdivision and watchfulness; and we have the surest expectations of an almost total exemption from this direst of scourges. Quarantine regulations will fly before it; for we shall all be certified to be in a state of purity. Our commerce now trammelled and soon to be annihilated, if Cholera appear, will regain its wonted elasticity—our firesides will be enlivened with their accustomed cheerfulness, and gloom and dismay will fly away, and tranquillity and security will reign in every dwelling; our people will bless you and call you their fathers. I ask you not to attend to this call, because it comes from your fellow citizen. I know the men I address too well to think that they will act upon any principle but public duty. I ask you in the name of Him who is merciful, in the name of your country, and for the sake of your children. I shall leave the matter in your hands, imploring the blessing of heaven on these efforts, and relying on his goodness and tender mercy.

Let me now give you as short a description as I can of the premonitory disease. The patient complains of lassitude. He has frequently partial uneasiness in the region of the stomach; but this not to such a degree as to alarm him. He has frequent evacuations from the bowels—from two to a dozen times a day—not attended with much griping. His countenance is sharp and dark. He knows not of this symptom, and it is only recognizable to the eye of experience. Occasional nausea may oppress him. But this is not a very common symptom. These symptoms may continue, varying in severity, from one to ten days, before the second stage of the disorder supervenes. The evacuations at the first are generally of a dark brown or blackish hue. As the looseness continues they gradually become less and less of a natural appearance, until they assume the consistence and aspect of dirty water. Some headache, cramp of the fingers, toes, and abdomen, and almost always slight giddiness and ringing of the ears, accompany these symptoms. Sometimes an intervening two or three days of costiveness supervenes, which is followed again by the Diarrhœa, and in a few hours collapse supervenes, and in general nausea and vomiting. The skilful practitioner will now give pills composed of aloes and calomel, or a pill composed of scammony, calomel, and aloes. The bowels then in general act briskly. Continue the course for three days—keep the patient warm in bed—give him mild and gentle nourishment; and, after an immense quantity of horribly offensive dejections, the patient is completely recovered, and snatched from the jaws of the dreadful fate which awaited him. Some practitioners prescribe the mustard emetic in this state, small doses of calomel and ginger, and bleeding freely; but I prefer decidedly, and on experience, the purgative system.

This is the stage to which I wish to reduce all our cases of Cholera. If we get them in this stage, we can cure them with as much certainty as I have indicated. The natural secretions can

be speedily restored, and health to a certainty induced. In the hospital at Gateshead every attendant had the premonitory symptoms; but the skill of their scientific attendants was at hand. Medicines were duly and regularly prescribed, and not one of them took the extreme symptoms. This has been the case too with almost all the medical strangers who have visited the disease, and almost all the practitioners of the district of Newcastle have had premonitory symptoms. If after this warning, Cholera should break forth, in any district to which it has been addressed, I hesitate not to say to the municipal authorities of that place, the blood of the sufferers will rise in judgment against the cruel apathy of those who ought to have been their guardians, natural protectors, and fathers.*

* If your patient in this stage is very robust, you must take blood to subdue irritation and high action; but this will be very seldom necessary, and must always be taken with the finger on the pulse, so as never to induce faintness. The disease now advances to another stage if it has been left unassisted. The cramps become stronger, and the sickness frequent and considerable. There is pain in the region of the stomach, and restlessness, and much thirst. The countenance is anxious, and the features sharper than natural. The evacuations become like barley gruel. Still however the pulse is not depressed, and in general the patient can keep on foot. He is often harassed with fits of vomiting. In this stage too the patient begins to experience excessive coldness of the extremities, and even partial coldness of the trunk. In all stages of the disease, except the consecutive fever, the tongue is moist, and slightly, but not deeply furred. The practitioner in this stage must step in with calomel and opium, till the healthy secretions are restored—say two grains of the former, and the fifth of a grain of the latter, continued according to circumstances. If the discharges are very violent, the quantity of opium may be increased to the fourth, the third and the half of a grain. Keep the patient warm in blankets—keep his arms and legs in strong worsted stockings. Apply heat to all parts of his body, by tins and bricks, and sand-bags; and in eight cases out of ten, the disease will not run into the stage of collapse. If the pulse will bear it, do not hesitate to take a moderate bleeding, but not so free as in the last stage. I am aware that the common practice in this stage is to give, in the first place, a mustard emetic; but I decidedly disapprove of it; for I have seen, in this stage, collapse most certainly produced by the emetic. I am well aware of the partiality of many to this emetic, and of their reasons; but I must say that I disapprove of producing vomiting, in all stages of the disease, except the bilious stage of consecutive fever. I think it is apt to depress the energy of the system still farther. You will be told it gives an impulse to the system, and that it produces bilious evacuations. This forced impulse is too often the precursor of the indi-

rect debility it produces, and hastens collapse. I entertain, however, the highest respect for the opinions of those who still practise the mustard emetic; but I am bound to declare my conviction: and I trust in stating my opinion, they will charitably give me that liberty they would take to themselves.

The horrible symptom, Collapse, comes next in order. It is characterized, as I have described the Musselburgh cases at the commencement of this Memoir, by pulselessness, coldness, loss of voice, terrible purging, and frequent vomiting, and a total cessation of the secretion of urine. Bleeding, and large opiates by the mouth, and stimulation by brandy, have been the practice in this stage; but I have no hesitation in saying that large opiates are wrong, and that general bleeding, in general impracticable, is often hurtful and seldom useful. I dare not detain you in giving my reasons for this opinion; but I have studied the subject with intense anxiety, and watched the practice in various hands, and I am bound to declare my conviction.

The best practice is to give a large enema, of from three to four lbs., of as hot water as the hand can bear, with six ounces of brandy and two drachms of laudanum. After one hour this enema should be withdrawn, by a tube introduced into the rectum. The enema is generally returned very cold, and another hot injection should then be thrown in.

All the ordinary means of restoring heat should be studiously attended to: warm diluents frequently given, with small portions of brandy. An insatiable thirst prevails, and the patient should be occasionally indulged in his anxiety for cold water. He is generally denied it, but this is as cruel as it is unnecessary. I would certainly be careful of the quantity. I would withdraw this injection at the end of another hour, and then introduce an enema of a pound and a half of warm water, in which two drachms of common tobacco is infused. In nineteen cases which I have witnessed, pulsation and reaction have followed the use of the tobacco, and bilious evacuations and increased temperature. The action of vomiting has nothing to do with the result; for in three cases which I witnessed, there was no vomiting after the exhibition of the medicine. We are indebted for this practice to an ingenious and most amiable gentleman, Mr. Baird of Newcastle.* If there is much pain of the bowels, particularly about the stomach, you can raise an instantaneous blister by applying to the stomach a cloth lifted out of boiling water, with great and immediate advantage. I consider the vapour bath and the air bath as very inefficient and trivial remedies; but the hot tin mattress which is used in the Hospitals of Edinburgh, will be found the greatest improvement possible; because it will heat the back, which was never effected by any other process before. Next to this, I prefer sand-bags to all other modes of giving heat. During the whole stage of collapse, I would recommend that from two to three grains

* NOTE B. Appendix.

of calomel be given every two hours; and if the cramps, pains, and sickness are severe, I would add to the calomel a quarter of a grain of opium.* I would satisfy the raging thirst; and, from its saline qualities, perhaps contribute to the melioration of the state of the blood, by giving every hour, or after every fit of vomiting, an effervescent draught, composed as follows: Three drachms of super-carbonate of soda, dissolved in eight ounces of water; a dram-glassful mixed with one table-spoonful of lemon juice, and a glass of water. This is an invaluable remedy, and should never be omitted. If you are fortunate enough to begin to see that the evacuations become feculent, then step in with full doses of calomel, with the addition of jalap or rhubarb. If vomiting is a harassing symptom, cup the epigastrium, and add a few drops of laudanum to your effervescing draught. If the collapse is very complete, the actual cautery is sometimes practised over the course of the spine; from the accounts of my friends, and the three cases which I witnessed, I would think often with advantage. In the Appendix,† I have described an instrument for the purpose, which lessens the alarm at so horrible a remedy, and indeed conceals altogether its nature. I cannot take leave of this stage without again most earnestly recommending the large hot injections.‡

Blueness has been said generally to characterize this stage; but in this country that is not the fact. The skin of the hands and face is brownish, not blue. If death is to ensue, there is a dreadful low wail of voice, which no man who has heard can ever forget. The lowest moan of the most wretched mendicant goes not to the heart so poignantly. A cold clammy sweat breaks forth on all the surface; the temperature rises, and the pulse even becomes more perceptible; the dejections become frequent and severe; and vomiting sometimes, though not always, is excessive; in a very short time the patient is a corpse. Sometimes indeed the vomiting and purging, and even the cramps, cease, in collapse, altogether; and when the spasms cease, I have observed that the cases are always the most incurable. But if nature is to rally, the dejections become less frequent and more feculent; the vomiting diminishes or ceases; the pulse gradually and steadily improves in fulness and in tone; the voice becomes more powerful; the strength improves, and the unfortunate is snatched from the dreadful fate that seemed to await him.§ But the horrors of this dreadful disease do not stop here. The system, by the peculiar poison producing this distemper, has been sunk into the lowest state of human existence. Those vessels which had ceased to beat, and all those muscular fibrils which have been for days convulsed and sealed up in spasm, cannot at once resume their healthy action. The *vis medicatrix naturæ*, in resuming her play, seems over-sollicitous for the restoration of the functions; and consequently she

* NOTE C. Appendix. † NOTE D. ‡ NOTE E. Appendix.
§ NOTE F. Selection of Cases treated by Calomel.

institutes an increased, and dangerous action in every artery of the system.

The tenderest and most important organs of the system, the brain, the lungs, and the liver, are now in imminent danger; and the skill of the physician is called into play, not to be executed in stages and degrees; but at once, promptly, and decidedly. Does congestive action manifest itself in the head, the cupping glass or leeches should instantly be applied, and vesication produced over the whole scalp in twenty minutes, by the application of a strong infusion of cantharides in the strongest ascetic acid. The lancet must not now be spared, and drastic purgatives are to be freely administered. If the lungs are the seat of high action, indicated by oppression of breathing, sense of suffocation, full, large, and bounding pulse, and often spasm in the chest, bleed freely, and do not spare purgation; and give 30 drops of wine of antimony every three hours. In bad cases place the patient in a half-sitting posture. This practice is most important. I am indebted for this hint to John Fyfe, Esq. of Newcastle, an excellent and eminent Surgeon, and I think, from positive experience, that it is a practice highly worthy of attention. A greenish matter is now often largely discharged from the stomach, for which one or two emetics of common salt may be given with advantage. You must now attend carefully to the state of the bladder, as now the urine is secreted largely, and dangerous retention frequently takes place. The eminent Mr. Fyfe thinks that the duration of the consecutive fever is commensurate with the duration and severity of the collapse; and not much dependent upon the kind of remedies employed. This conclusion is doubtless generally correct. But sometimes a very mild case precedes a dangerous fever; and sometimes after the severest collapse there is no fever at all. This fever, unless strictly watched, is more frequently fatal than collapse itself. After the purgatives I have recommended, three grains of calomel every four hours till the mouth is touched, is the best practice; but it is difficult to touch the mouth. At the end of two days, the calomel should be succeeded with mild aperients, castor oil, and laxative enemata. When the pulse rises under depletion, do not hesitate to repeat the bleeding boldly. Even three or four days after reaction, dreadful oppression of the brain frequently supervenes. This state should be treated exactly as we do *Hydrocephalus Acutus*. I ought to remark that the consecutive fever always assumes the shape of *Hydrocephalus Acutus* in infants, and should be treated accordingly. If recovery is effected from this consecutive fever, it is not uncommon that relapses more or less severe take place. These relapses take place as often after the mild as after the severest form of the disease; and may be generally traced to some imprudence in diet, or exposure to cold. We must treat them in the same mode as the original disease, diminishing the quantity of our doses.

To return to the premonitory symptoms. I am assured from

many circumstances which I shall lay before the public in detail, that the effluvia from the excretions of an individual having Diarrhœa Cholericæ may communicate to another predisposed person the most developed form of the disease; and, when we consider how long men will follow their ordinary occupations, or travel with Diarrhœa Cholericæ immense distances, the gradual march of this dreadful malady is at once accounted for. This should constitute to you, Gentlemen, a powerful argument for your immediately instituting a careful system of prevention of the spread of this Diarrhœa Cholericæ. A Surgeon of a neighbouring village informs me that an immense number of persons are at present labouring under Diarrhœa, of a description I should think Cholericæ; and I would not be astonished to see a sudden and dreadful irruption in that village, if not prevented by timely interference.

I have now finished a hasty, but yet a faithful description of this dreadful disease. I have written it at a sitting, not having had it in my power to commence its composition till yesterday evening. I trust my observations will be of use, not only in our own district, but in the country in general; and I will publish this Tract, convinced that it contains a summary of the experience of the most enlightened practitioners in Europe, on the treatment of this formidable distemper. I will beg leave to conclude this Essay, by again calling your attention to the premonitory symptoms, and imploring you in the name of humanity, and with a conviction which I declare before the great Author of our being, is impressed upon my mind in deep and solemn seriousness, that if from any unfortunate circumstances you should reject my proposals, a dreadful day of distress is to come upon us. Consider the habits of the lower society here, steeped as they are in all the predisposing causes of filth, drunkenness, want, indolence, wretched lodging and deficient clothing, especially in the article of bed-clothes. I am sure I am correct when I say, that the great proportion of the sufferers in Musselburgh and Newburn were as comfortably lodged and clothed as our master tradesmen are. What, then, may be expected to be our fate, when we consider the immeasurable distance between that condition, and the state of our lowest orders, they constituting so large a proportion of the bulk of the population? And let us not calculate that sobriety or plenty, or good clothing is to exempt us from this malady. In the experience of Mr. Fyfe of Gateshead, out of 71 patients, up to a certain date of his practice, 5 of them were drunken men, 12 of them were rather drunken people, 9 being men; 12 of them had been in want, 4 being men; 4 of them were boys, 6 girls and one child—and 31 positively sober,—54 being thus sober people out of 71. The facts are stated by a man of 40 year's experience in the place, who knew personally all the individuals, and a man of talent and observation.

There does indeed seem to have been a certain exemption in

favour of the higher orders in these epidemics, in all quarters of this country; but that exemption does not seem to have resulted so much from the superiority of their habits of living, as from the superior airiness and cleanliness of their dwellings, and their persons being warmer clothed. Too many of this class induce the same complaints by luxuriousness, that the poor produce by want and dissipation; and though, to be sure, drunkenness is not their vice, yet is it not a truth that a great proportion of us drink too often, too deeply, and of liquors so strong and unnatural, that sound health cannot be enjoyed by the habitual user of them? and we place ourselves in a condition with regard to Cholera, little better than that of the wretch reduced from want, or the still more to be deplored being, the victim of dissipation.

I fear it needs only that some more highly predisposing state of the atmosphere should exist, to induce a flood of disease even into this privileged order. Let me then call aloud to them in the voice of warning,—point to the fate of many respectable people in Musselburgh, and to hundreds of the well-fed, and properly clothed and lodged in England; and let them bethink themselves, that if they do not exert themselves in putting down the germs of this awful malady, the whole atmosphere of the land may become so contaminated that it may come to be situated as India is, where the disease is universal, attacks all ranks, the prince on his bed of satin and gold, and the trembling paria in his crevice in the rock. My friends, if this disease remains unchecked, I see no limit to the evils which it will produce in this commercial country. Think but for a moment of the continuance, for years, of quarantine regulations and restrictions. When the disease becomes general at home, we may indeed release our internal quarantines; but will foreign nations yet exempted from the scourge, admit our ships to their ports, or cultivate any intercourse with us? I pray you then listen to my imploring voice of exhortation. Kill this fatal grub in the state of the crysalis, and it will never become the fly. Think of your condition, if you reject this counsel. You have no point of ground upon which you can plant the foot of safety. All is quagmire below you; and at last you are to plunge into a fathomless abyss of noisome and pestilential miasmata. Listen to my voice—adopt my simple remedy—and if you have a case or two it will be the utmost. It can never assume the shape of an epidemic; the world will soon have confidence in your security; and you yourselves will enjoy, in a happy exemption from all the horrors of this dreadful pestilence, the delightful solace of having done your duty to your poor townsmen; and that God who never chastises but in mercy—and who, I trust, has indicated the way to us, by which we can escape these great judgments—will look down on your benevolent efforts with approbation and complaisance. I have never, on any subject but one, (the reformation of my unfortunate countrymen from the vice of drunkenness,) exerted so

much enthusiasm, and suffered so much labour, as in the study of this disease. However, the breaking down of my constitution, which I have suffered in this cause, will go for nothing in my estimation, if I may be the humble instrument of securing even a portion of my townsmen from destruction. I defer my observations on Hospitals, Soup Kitchens, Clothing, Mendicity Societies, and various subjects of interest, till the next meeting of the Board; convinced that I have already trespassed too largely on their time and patience.

SUPPLEMENTARY DISCOURSE.

THE hurried discourse which precedes this, demands of me, in giving it to the public, to adduce some additional observations, which could not appropriately be addressed to those to whom the essay was submitted. I will therefore venture in this discourse, to give some views, and narrate some facts, which seem to me important, and which have been omitted in the report. I shall divide the observations I propose making, into three departments.

1st, I will inquire into the nature of the disease;

2nd, I will allude, in greater detail than in the report, to some points of treatment; and,

3d, I will venture on some miscellaneous observations, which did not occur in the report.

Before attempting to treat a disease, it is the duty of the physician to settle on some fixed principles, which shall regulate his remedial attempts. Now, what is Cholera? Is it a disease of the nervous, or sanguineous systems? I had not considered the disease long, till I came to the conclusion that those German physicians who had believed the disease to be one resulting from a derangement of the nervous system, were right. They have attempted, to be sure, to designate more particularly than our present state of knowledge will warrant, the particular nerves affected. Their general principle, I have no doubt, however, is correct; and it was with no little satisfaction that I observed so acute a pathologist as Dr. Philip, advocate a modification of the same doctrine. The view which I entertain of the theory of the disease is as follows. I think Cholera is the result of a morbid poison applied to the system. I do not stop here to inquire in what way that poison is applied; whether by a process of direct infection, or by a malaria atmosphere. The poison is conveyed into the system, I think, (from the parts first affected,) by the mouth. Its first symptoms are gastric irritation; and if in this stage remedies are used to rouse the energy of the bowels, and to stimulate them into such action as to throw off offending causes, the future germ of Cholera may frequently disappear: nay, even the efforts of the constitution itself may work it off, and those dreadful final symptoms which characterize Cholera Asphyxia, may never appear. In the bowels there exist large portions of those nervous productions of the great sympathetic, called ganglions, whose office it is "to combine the influence of the various parts of the nervous system from which they receive nerves, and to send off nerves endowed with the combined influence of these parts." The poison we have spoken of

speedily comes in contact with these ganglia, and by sympathy with the whole important viscera of the system. Let us take a review of the functions of the intercostal, or great sympathetic nerve, to help us to this conclusion. It forms a system within itself, of the cerebral and vertebral influence combined. It may be said to arise as well from the brain, as from the spinal marrow. It is an offset of the sixth pair of nerves of the brain, receiving a twig from the fifth pair; but what is of more importance, it procures branches from all the vertebræ, and forms ganglia in the neck, the chest, and very largely in the bowels: thus influencing, in all their vital and essential actions, the heart, the lungs, the stomach, the intestines, the uterus, and the bladder, &c. It is thus that the experience of the most ordinary observer is exemplified, when he tells you that the diseased functions of his head and of his belly are so intimately connected together: and I need not point out, in a prolixity of detail, the intimate, perpetual, and decided connexion which exists between the functions of the heart, the lungs, and the other viscera, and of the seat of the sensorium itself. Suppose, then, that the poison is applied to the ganglia of this immensely influential nerve, what would we expect to be the first symptoms, understanding it to be a morbid influence of deadly power and destructiveness? We would first expect symptoms of irritation in those parts more extensively supplied with nervous influence; and accordingly, the stomach and bowels are the first to show, in their deranged actions, that a deleterious influence has been applied to them. Granting that the disease is allowed to go on unchecked, the action of these parts becomes so changed, that instead of merely pouring out the lubricating and digestive fluids, their vessels lose their tone, and the serous fluid of the blood itself is the matter they eject. The albuminous stools of the Choleric patient too clearly prove the truth of this assertion. A few hours of this terribly debilitating cause, is sufficient to effect its deadly purpose. The system is early prostrated in utter weakness. I speak of the system of the involuntary functions; for every physiologist knows that the voluntary functions of motion may sometimes remain entire, when those of sensation are altogether dormant, and *vice versa*; and by a parity of reasoning, we can have no difficulty of apprehending, how the functional nerves may be thrown into the extremest disorder and even debility, while yet the nerves of motion retain their powers. It is this that explains the reason, why the Cholera patient will sometimes sit erect in bed, and show energetic muscular power, a few minutes before he expires. This deadly influence we suppose, then, to be very much confined to the ganglionic plexuses. We have seen its first effect in most debilitating discharges; but these nerves also influence the action of the lungs, and the consequence is, that though their usual excitant, the oxygen of the air, may produce an approach to their usual *motions*, yet the economy of their functions is interfered with. In a state of health, they are constantly throwing off carbon from the system in the state of carbonic acid. That process is greatly modi-

fied, or altogether ceases. In consequence the blood becomes soon loaded with carbon, and even the external appearance of the sufferer is blue and dark, the consequence of the dark colour of the fluid below his skin. It is to the derangement of this function, too, that a deficiency of the heat of the body is to be attributed.

This is not the place to enter into inquiries concerning the theory of respiration and animal heat. It is sufficient to announce, that the most respectable inquirers have concluded, that the source of animal heat is in those changes of capacity for caloric, which are induced in the lungs by the formation of new substances in the process of respiration. We have seen that these processes are interfered with, and we can therefore be at no loss to learn why the heat should depart from the surface, and exist only (and that in a very diminished extent) in the parts within. The surface is naturally colder than within, from the cooling influence of the external atmosphere. We learn from this theory, too, the cause of the cessation of the pulse. The morbid influence has already greatly diminished the powers of the heart and arteries, and there is added to this, the circumstance that the fluid coming to stimulate the heart, is now no longer its salubrious exciter. It wants its oxygen, its salts, and many of its other qualities. It is changed even in its mechanical properties, is deeply loaded with carbon, grumous and sluggish; and it ceases to give the healthful stimulus to the heart, necessary to circulation. It is under these influences that the heart becomes every hour weaker and weaker, and at last is so feeble that no blood is propelled to the extremities, and circulation can only be felt in those larger trunks that come directly from the heart. I can only account for the spasms in this disease, by adverting to the intimate sympathy which exists between all parts of the nervous system; and by the probability, that, though the muscular power is not the principal seat of this disease, yet by sympathy with the derangements of the nerves of the important functions, we can easily see the origin of the spasms. Spasms and twitchings undoubtedly occur some hours after death, which is probably to be accounted for by the supposition, that the disease having been principally in the functional and involuntary nerves, death took place in that portion of the system depending on their influence, sooner than in the muscular portion, which was comparatively unaffected. And thus are there exhibited the struggles of muscular irritation, some time after the internal and vital functions have ceased to live. Analogous to this, is the gradual heating of the cholera body after death, and the fact of its retaining its heat, even in a cold atmosphere, for hours together. I account for this, by bringing to mind the great quantity of accumulated carbon in the blood, and its consequently being rendered comparatively a non-conductor, at least a very slow conductor of caloric. Thus the slight degree of heat which remained in the vital parts within, very slowly reaches the surface, and only after the expiry of hours has fairly forced its way through the mass of carbon, to the colder atmosphere without.—
See Greenock examinations in the Appendix.

This short sketch of the theory I hold in the disease, I could have wished to have accompanied with more extended reasonings ; but the limits of this ephemeral will not permit that amplification. I am, however, so much convinced of the truth of this theory, that on it will I frame any indications of cure which I may attempt in this disease in future.

2d. Let me now allude, in greater detail than I have done in the report, to some points of treatment.

The question as to the general propriety of blood-letting, is at the same time a very difficult and important one. A great proportion of British practitioners, who have treated the disease, have shown a partiality to it. The reasoning leading to the practice is specious, but I fear superficial. We are told, take away a portion of the circulation and you relieve it of a part of its load, and give nature freer play ; we unload the system, and induce the surcharged vessels to put on a new and livelier action. Now, in accordance to the theoretical views I have ventured to adduce upon the disease, it will be seen, that a return to healthy circulation will not result from abstracting, or adding, a portion of the circulating mass. The cessation of arterial action is not dependent on the state of the fluids, but on determinate derangement in the sensorial power ; the result of a morbid poison, by which the machinery of the circulation has been impaired in its healthy action. I speak of the stage of collapse, or the period which immediately precedes it. In that stage I can see no advantage to result from withdrawing a small portion of blood ; and in 99 out of a 100 cases, a small portion can only be withdrawn. The sensorial derangement will not be relieved by the evacuation, and the system, already depressed by excessive discharges of the most debilitating kind, will be plunged still deeper into that fatal weakness which is the principal characteristic of this disease. The evacuations of advanced Cholera, are not the discharges of alvine matters, or of the ordinary fluids of the bowels. They are largely composed of the serous and saline parts of the blood ; and consequently produce a destruction of the strength, as swift as it is complete.

I entertain the highest respect for some of the eminent supporters of bleeding ; but, after conscientious attention to the subject, and watching the practice in various hands, I feel myself bound to declare my conviction. If the patient is attended within an hour or two of the attack, and the pulse is strong, and the arterial system in a state of excitement, and he is yet unreduced by the debilitating dejections of choleric Diarrhœa and vomiting, bleeding is demanded by the ordinary rules of our art, which indicate venesection as the best mode of relieving arterial irritation and high action. But when was it proposed till the present day, to relieve a condition of the extremest depression, and of no arterial excitement, by the abstraction of the principal vital fluid ? The blood is unnaturally thickened to be sure, grumous and probably carbonized ; but will the removing of a small column of venous blood change the condition of the rest of the sanguineous fluid, or give energy to those nerves which, under a

poisoned influence, have ceased to perform their important functions, of giving life, action, and energy to the whole system ?

I grant most freely that in the first and second premonitory stages, bleeding may do good ; for then the arterial system is in a state of excitement, and the poison has not fixed its deadly fangs on the powers of life itself. But then, even, I would be cautious. A depressing influence is in the constitution, which may every hour develope itself as most deadly in its power and tendencies. Let there be withdrawn only so much as to diminish somewhat the energy of the circulation ; but do not trench on the *vis vitæ*. Ever recollect that a poison is within which nature is struggling to oppose, and by instituting increased action seeks to free herself from her insalubrious oppressor. Nor is this the language of theory only. I have seen many attempts at bleeding in collapse, but never to any other purpose but apparent harm ; and in numerous instances of the last stage of the premonitory symptoms, I have thought collapse induced by injudicious bleeding.* I was favoured with the perusal of a case by a medical friend near Musselburgh, which, under appropriate treatment, and without bleeding, I have no hesitation in saying would have done well ; but from the apparent success of another, and a published case, which had excited a good deal of attention, my friend thought proper to repeat the practice, and lost his patient. But this solitary case need not be quoted ; for in the practice I have seen, I have bitterly to lament the injudicious use of the lancet in severe premonitory cases.

There is still a question among practical men, if a state of excitement always precedes the attack. I think it does. In all cases I have had it in my power to observe from the first, it has done so. The poison of Cholera in this country does not seem sufficiently energetic to destroy the constitution in a moment, as it is said it sometimes does in India. Nature struggles for emancipation, generally for days together, and institutes new actions, and various discharges, to relieve herself of her load. It is in this condition that the injudicious practice of giving a mustard emetic is frequently resorted to. If an emetic is indicated, the symptoms giving reason to suppose that sordes are to be discharged from the stomach, common salt and water will be the best emetic ; it will not irritate and stimulate. But in general, copious draughts of warm water will answer the purpose better. Upon the whole, I entertain much doubt of the propriety of emetics in the advanced stages of Cholera.

I come now to consider the important subject of the use of calomel in this disease. All British practitioners, who have treated the complaint, have resorted to this chymical preparation. I am not sure that in general calomel is prescribed upon any principle ; but rather empirically, and without very definite conclusions. I entertain no doubt of the propriety of its use ; and have, for the advantage of those who have not seen much of Cholera, given in the Appendix, numerous cases illustrative of the use of it. Perhaps

* See NOTE G.—Cases showing the result of the practice of bleeding, &c.

in our present knowledge of the nature of the disease, we must speak with caution, in endeavouring to explain the rationale of its beneficial action. But this is clear, that scarcely any substance will lie more agreeably on the stomach than calomel, in this disease; for I have been surprised to see repeated doses of calomel retained, when all other things were vomited. Dr. Lawrie says that he knows, from personal experience, that calomel will remain on the stomach when nothing else will: and my experience of it has been exactly to the same purpose.

Thus there is no objection to its use, on the score of local irritation; and from its action on the system as an active mercurial, we may expect it to expedite the return of the secretions of the bowels, liver, and kidneys—which, when obtained, our patient is safe. In England I seldom saw ptyalism produced by calomel; but here, where we have the advantage in our Hospitals of a capital system of heating, our collapse wards being seldom under 75 deg. Fahrenheit, all the cases which recover are decidedly under the influence of mercury. Thus does the effect of this excellent application of heat, not only act mechanically in restoring that which Nature has ceased to supply, but it also gives increased effect to the appropriate medicines. Even after enlarged experience in this disease, I think calomel will retain its place among the remedies used for its removal.

Opium is the next remedy of importance to which we have to allude. This powerful drug has been too indiscriminately used in the treatment of Cholera; and the scientific practitioners with whom I have had intercourse, now use it with much greater caution than they did when they commenced the treatment of this disease. In the Appendix will be found several cases, explaining the mode in which the English practitioners now use it.

Several considerations press upon us in reflecting on the use of this drug in Cholera. With what intention do we administer it? It is a stimulant. But have we not pure stimulants of a kind which do not partake of its narcotic nature, and which will give excitement, and act as cordials, without either a depressing or narcotic effect upon the nervous system? Upon the whole, it is my opinion, that the use of opium ought to be confined to its effect in obviating spasm, and when spasm does not exist, if a stimulant is indicated, the pure vinous diffusible stimuli seem more appropriate. We must not forget, however, how useful it may be, from its soothing and astringent qualities, in moderating the discharges; but let us also remember, that more than half the deaths of Cholera are in its final congestive fever, and that the principal symptom of that fever is congestion of the head; and consequently that the accumulated effects of a narcotic stimulant is much to be dreaded and avoided.

I would then, very earnestly expostulate against any thing like a liberal use of this drug in the disease; and would only recommend it in cautious doses, for the purpose of moderating the discharges and subduing spasms.

Brandy comes next in the list of the remedies employed in Cholera; and as in all cases of collapse I have seen treated by others it has been employed, I must inquire into the propriety of its use with some caution and accuracy. Does the pathological history of this disease indicate the propriety of the free use of a diffusible stimulant? I appeal to all those who have witnessed dissections of Cholera, if I am not correct in stating that the great and leading facts elicited on the examinations were, that the important viscera, and even the brain, showed most demonstrably that they had been subjected to high action. I have witnessed the dissection of six bodies in the disease, and I subjoin in the Appendix the history of the examination of three of them.* In all of these, demonstrations of inflammatory action were most clearly evinced, and inflammation, too, of the nerves, plexuses, and membranes, which could not be disputed; and that man must be hardy indeed, who can look at these details, and say that, in its early stages, this is not a disease of inflammatory action. In the early stages this action can be subdued; and it is this important fact to which I have laboured to call the attention of the country. But the organs principally affected, the gastric ones, it is known to every tyro, most unhappily do not bear such free bleedings as other important inflammations. I make this remark, because it may be urged, why do you give us so many cautions about blood-letting when you acknowledge, with the same breath, that it is a disease, of inflammation? I answer to this, that it is only so in its early stages. Pass the bourne of the second premonitory stage, and the evil is consummated. You have no longer a case in which inflammation alone is to be considered, but one in which all the functions of nature have lost their powers; and where, alas! you can only temporize, and look on, and watch for, and assist the healing power of nature.

Is brandy, then, a remedy in any stage of this disease? In the report, I have permitted its use in small quantities, not venturing to make an innovation on the established practice by avoiding it altogether; but it is now my duty to say decidedly, that the cup of brandy you perpetually see at the head of the Cholera patient, cannot be given him innocuously. His bowels are in general in a state of positive high action and inflammation; so are his brain and spinal marrow, and so are even the vascular systems of the greater nerves. What do we gain by brandy? We obtain a temporary diffused excitement from its stimulant powers, and a kind of soothing of the sensations from its narcotic influence; and can these effects produce any change in that morbid condition of the system, which, we have seen, is cause of Cholera? I will be told that brandy, by the mouth and by enemata, have often and evidently done good. Let, then, this be its restricted use. Never give it, either in the one mode or the other, but in those extreme cases of disease where even the temporary fillip to nature, which it can give, may be courted;

* See Note H.

and though it is to come into contact with and irritate diseased tissues, still perhaps, in these extreme circumstances, its use may be indicated. But in the premonitory stages, while action, sometimes high action, still exists,—and when we know many vital parts are highly irritated, and that our business is to subdue that action,—I never see the glass of brandy at the patient's head without a shudder. It is a fact that intelligent practitioners are every day becoming more and more cautious of the use of this stimulant. I feel that I have ventured far in this wholesale condemnation of it; but I confidently anticipate the decision, in my favour, of those who are to come after me, inasmuch as my views are certainly founded in the ascertained pathology of the disease. When I think a cordial strongly indicated, I am in the habit of preferring the pure wines, the irritation to the inflamed tissues, from their use, being less to be dreaded than the sharp and naked points of alcohol.

The next great remedy employed in the cure of this disease, is the application of heat. The restoration of the natural heat, so totally lost in the collapsed stage, is suggested by the most natural and evident reasons. The only question is, what is the best mode of effecting this object? I shall first allude to the most approved modes of applying heat in Hospital practice. In this respect I thought the English Hospitals very deficient. One of the Edinburgh hospitals is admirably managed, by a plentiful supply of heated air, and by steam heated mattresses. The Vennel Hospital of Greenock is heated by flues communicating with two furnaces, which keep the whole wards constantly at a temperature of from 65 to 75 degrees Fahrenheit. We have also a plentiful supply of tin vessels, fitted to the shape of the various parts of the body—the abdomen, the arms, the legs, and the chest—by which the heat of warm water is easily conveyed to any of these parts. We have also always in readiness a plentiful supply of heated sand for sand bags. The sand bags are in general made too large, in consequence of which they are heavy and oppressive. They should be flattened bags, and contain only a thickness of an inch and a half of sand.

The advantage of the general heating of Cholera wards is prodigious. I have already explained how much more efficient it makes the operation of the mercurial medicines. We have never used the air baths here—perhaps because I entertain the idea that the application of heat by this slow conductor is not the most efficient mode of communicating it, and that the necessary machine is inconvenient during the frequent dejections and vomiting of the patient. But in all Hospitals a ward should exist, removed from the influence of the stoves, in which to place the patients when the stage of consecutive fever has effected them. In private we have only in our power to use the sand bags, tins, and bottles, which can be procured; and to take care to procure a plentiful supply of bed-clothes, and as large fires as possible in the grates. The arms, which are apt in jactitation to be perpetually exposed, should be covered to the shoulders with worsted stockings. In the country, where Hospitals cannot be procured with stoves, it is astonishing what perseverance will do in

accomplishing our purpose by very slender means. In the Appendix will be found a case, by Dr. Morson, which occurred in a pitman's house, near Newcastle : and which shows very well how much can be done by the anxious application of ordinary domestic means.

All practitioners agree that rubbing is of the greatest importance. The excitement which it gives to those extreme vessels, which, in this disease, seem so peculiarly to lose their tone, indicates its utility, and wherever assistance can be procured it should not be neglected. When Dr. Mollison of Edinburgh was in Newcastle, he cured many cases by energetic and continued rubbing, which in all probability would not have recovered without it.

We must next take into consideration the claims of counter irritation, to the rank of a valuable remedial agent in this disease. It is evident from the views given, and the facts stated, that counter-irritation is clearly indicated in this disease. I regret exceedingly that none of the dissections I have been enabled to give, show the condition of the spine in Cholera. Several friends of mine, who have examined the spine, say that the membranes of the spinal marrow were inflamed. If this is the case, undoubtedly a mode by which inflammatory action will be subdued, in this immensely influential part, without at the same time debilitating the general frame, is of the utmost consequence. With this view, I have three times used the actual cautery to extremely bad cases, but I regret to say in none of them was I successful. They were, however, the worst description of cases, and do not stagger my belief in the utility of the remedy, if applied to a curable case. The best place to apply the cautery seems the lower part of the back of the head, particularly where it joins the spine, and along the spine itself. Dr. Barry says that Dr. Lange, at Cronstadt, by the cautery cured 12 cases out of 14. I am skeptical of this, but am willing to believe, that much advantage may spring from this very decided mode of counter-irritation.

The next effectual and most efficacious mode of applying a violent irritant, is by placing on the skin a cloth newly wrung out of boiling water. This mode I am in the habit of regularly practising, and often with benefit. The blister is raised instantaneously, and in the pains of the hypogastric region, so common in this disease, it in general gives relief in a few minutes. The next speediest mode is the infusion of cantharides in strongest ascetic acid, which will raise an effectual blister on the scalp, or other part of the skin, in a few minutes.

I know nothing of the effects of galvanism, never having seen it adequately applied in this disease. I confess that, from the nature of this agent, I do not expect it will be eventually found useful. The desideratum in this disease is, not the restoration of vital or nervous power, but the cure or alteration in the diseased state of the nervous power. Now, the proved effects of galvanism are only, that it is able, for a time, to act as a substitute for the nervous power. That it can change unhealthy actions of that power we have no fact to convince us. In Ceylon, I understand, a successful case took place from its use, though it was only directed through the lungs ;

and I have sent to the neighbourhood of Musselburgh a powerful galvanic battery, which, I understand, they have put to use, and speak favourably of the results. But I have heard of several unsuccessful experiments in this neighbourhood lately. The remedy seems, at first sight, adapted to the disease; but even Dr. Philip, who might have been pardoned though he had hoped too much from galvanism, says—"I cannot overlook two circumstances, which seem, in some degree, to render the expectations from it less sanguine. That when the nervous power is merely withdrawn, it can supply its place, rendering the functions of the organ as perfect as when that power was entire, has been ascertained; but in the disease before us, we have reason to fear that the failure does not consist in the mere loss of nervous power, but that the operation of the poison, or the organs of that power, diffuses the influence of the poison itself throughout the system. The other circumstance is, that if it be capable of counteracting the offending cause, it is doubtful whether the degree in which it can be safely employed is sufficient for this purpose. In supporting the function of a vital organ, when it is deprived of its nervous power, a very considerable galvanic power is necessary. It is not to be supposed, in our clumsy mode of applying it, that the same degree of power will be sufficient, as when applied by Nature herself. This objection, however, only relates to the degree of benefit to be expected from it. The way in which it was employed in my experiments, is not the proper mode of applying it in the disease before us. Wires, from the positive end of the trough, should be applied to various parts of the head, and along the whole course of the spine, and wires from the negative end to various parts of the chest and abdomen."

Other remedies have been lately proposed, some of them by high authority. A distinguished foreigner, who visited this country lately for the purpose of attending to this disease, proposed, and carried into effect, the process of injecting the veins with a solution of opium. I am not sure of the theory on which he expected relief from this process; but I have heard that he had experienced great benefit from it in tetanic and other violent nervous affections. It totally failed, his patients having sunk as if no remedy had been used. In Newcastle, where I had the pleasure of visiting him, I predicted to my friends that this would certainly be the result of the experiment. The narcotic effect of opium was not to be expected to have power to change the altered state of fluids to that of health, nor to banish the distressing and morbid influence settled on the nerves, and slow as the circulation is in collapse, it was hardly to be expected that his remedy was ever to reach the heart and vital parts of the system. In my report to the Board, I have stated my conviction of the utility of the tobacco enema; and I have given in the Appendix a series of cases by Mr. Baird, and an essay illustrative of his theory in using it. He prescribes it under the conviction that Cholera is a disease of spasm of the important viscera, particularly the gall bladder; and that the relaxing effect of the tobacco subdues this spasm,

gives free play to the powers of life, enables the circulation to recommence, and the secretions to flow.

I am not prepared to dispute this doctrine of spasm to a certain extent. It may be one of the effects of the poison to cause spasm of the important viscera. We see the bladder contracted, even in death, in every dissection of Cholera; and in two cases I have found the gall duct impervious (in four cases it was patent.) This closure must have taken place from effusion of coagulable lymph shutting it up in the first high action of the disease. I do not think this closure, in the dead state, could have been from spasm. But I am disposed to attribute the good effects of the tobacco, rather to some specific power in this peculiar drug, by which it counteracts the poison of Cholera, and reduces, by its depressing influence, the high action of the vessels, thus inducing a new and salutary action. But be the theory as it may, the practice is good, and I earnestly invite the profession to give it a fair trial. I am convinced, that, after the first stage of this disease, the bile ceases to be formed. No doubt, we always find the gall bladder full. But I believe this filling to have taken place at the commencement of the disease. There never appears any yellowness of the skin in any of the secretions, during the progress of Cholera, in the perspiration, the urine, or the saliva. There is no proof of bilious absorption, which infallibly would have existed if bile had been formed. I believe, in the advanced stages of Cholera, that a total suspension of bilious secretion takes place as well as urine; and that the reason we generally find the gall bladder full, is, that the debilitated organ cannot propel its contents. The urinary bladder is differently situated. It is a voluntary organ, to a great extent: and I have already explained that the voluntary muscles do not seem much under the influence of this poison. The last formed portions of urine, in the state of health, are thus expelled, and afterwards none forms. I have stated that coagulable lymph is in all probability the cause of the occasional closure of the gall duct. That, in the early stages of this disease, this part of the blood (the lymph) is largely separated, will be proved by the dissection of M'Millan, narrated in the Appendix,* where a lengthened polypus was found in the whole course of the longitudinal sinus, and one in each ventricle of the heart.

3d. I have now to approach a subject of the extremest delicacy, the question as to whether this disease is epidemic or contagious.

What is the exact meaning of the word epidemic? It means, that the atmosphere of a district may become loaded with a morbid poison, whereby specific diseases can be communicated to the healthy. What is the meaning of the terms contagious and infectious? They signify that disease may be communicated, from an unhealthy body to a sound one, by close approximation or actual touch.

Now, having ascertained the exact meaning of the terms, let us inquire to what extent this disease gives evidence that it is epidemic

* See NOTE H.

or contagious. No man, who carefully examines the habitudes of this disease without prejudice and prepossession, can come to any other conclusion but that, in all great irruptions of it, it is an epidemic, depending on atmospherical and malaria influence. Dr. Lawrie's most graphic and excellent description of the disease at Gateshead, and Gateshead Fell, need only to be read by any unprejudiced man, to convince him that the unfortunates seized on the morning of the 26th December, were smitten by an atmospherical epidemic, and not by contagion. "The inhabitants of Gateshead," says the Doctor, "fell asleep on the 25th of Dec., in perfect security and devoid of panic, but before the sun rose on the 26th, fifty-five individuals had been seized, thirty-two of whom were destined not to see it set." I have no doubt that a predisposition, from the state of the atmosphere, exists in every devoted locality of Cholera, for a length of time, before it actually supervenes. In Newcastle, the experienced practitioners told me explicitly, that bowel complaints had harassed their population for months before the disease appeared among them; and, in Tranent, one of their medical men stated that the streets of his village could attest that fact for many weeks before the disease appeared there. Over all this country indeed, there has of late years been a change in the character of the bowel complaints. We have now, in this town, ten cases of dysentery for one we had some years ago, much fewer pulmonary complaints, and many more gastric ones. This predisposition to gastric derangement, then, existed in this country when the disease broke out in Sunderland; and, aided as it was by the fact of our lowest orders (the principal victims of this disease,) being then in a state of great depression, it was no wonder that the pestilence should have so quickly established itself.

All observation shows most clearly, that the debilitating causes of debauchery, filth, drunkenness, deficient clothing and food, are strongly predisposing to the action of this poison on the system; and the experience of every day tells us, that the opposite state, of high health, sobriety, and cleanliness, defends the body from the influence of Cholera. Instances undoubtedly occur, where these circumstances do not afford an immunity. But they are rare, and we have every reason to think that in these constitutions some occult predisposing circumstances, difficult to recognize, existed. Let us look to the experience of a country where sixty millions of human beings have been swept into eternity by this pestilence. After a most careful examination of a great body of Indian experience, in the manuscripts of various friends, the inferences that may be drawn from its history there, may be stated as follows:—

1st. That medical men, hospital assistants, &c., were not more liable to take the disease than the rest of the community—in many instances less so.

2nd. That it was not communicated by the clothing and beds of the sick to healthy subjects, or even to those labouring under disease.

3rd. Regiments marching from one station to another get it all of a sudden, on reaching a certain spot, and the disease as suddenly disappears in a day or two, after changing their ground.

- 4th. It appears suddenly in a place, continues a week or two, and as suddenly disappears.
- 5th. Particular parts of a station or camp are attacked in preference to others, when the communication is unrestricted.
- 6th. Banks of rivers and water-courses are more obnoxious than high and dry situations.
- 7th. On a change of weather the disease sometimes is arrested.
- 8th. The disease passes by intermediate towns and villages, and seizes on more distant ones—inexplicable on the principle of contagion.
- 9th. Seclusion, and non-intercourse with the infected, does not always afford security against the disease.
- 10th. A ship from England took the disease immediately she came to anchor in Bombay Harbour, before there was any communication with the shore. She had passed up along the Malabar coast, about seven or ten miles distant from the shore. This sets the question at rest for ever, as showing the power of atmospheric influence in producing the disease.

My friend, Dr. Meikle of Edinburgh, long a medical officer in active service in the affected districts of India, has just favoured me with several communications on this subject, an abstract of which will, I am sure, be highly acceptable to the public. My friend begins by saying—

“In reply to the question of contagion, I cannot do better than observe, in the words of the compiler of the Bengal report,—‘If, by contagion, is meant the communication of the disorder from person to person, by means of contact or close communication, then in this strict sense of the word Cholera is certainly not contagious.’ For my own part, at least, I had never any reason to suppose it to be so, during the thirteen years I witnessed its extensive ravages in India, in garrison, in cantonment, or in the field, in marching from place to place, or in standing camps. From what I have seen of the disease in this country, I have had no reason to change my opinion; on the contrary, the way in which it has been almost surrounding this populous city, for a time, amidst the daily promiscuous intercourse with the neighbouring diseased villages, rather confirms it. Up to this moment, (17th March,) we have not had Cholera in Edinburgh, as an epidemic. I first saw Cholera at Jaluab, on the second or third July, 1818, just when it commenced. It was apparently moving south, and we met it at right angles. I had proceeded two days in advance of the brigade, for the purpose of procuring accommodation for the sick and wounded, after the battle of Mulendpoor. The medical men of Jaluab supposing it might be contagious, I wrote to the commanding officer of my detachment, on the 4th, requesting that he would not come near the cantonment, but encamp S. W., two or three miles from it, or on the opposite side of the river, and that I would meet him with the wounded men there, being anxious to get them away from the influence of the epidemic. I did so, and on the following morning the brigade marched in high health towards Hydrabad. In the course of that evening we had two or three cases of slight diarrhoea. I was apprehensive of what might happen, and, summoning all my assistants over night, I prepared them with lancets, opium pills, calomel, laudanum, and oil of peppermint, and gave them instructions how to use them and to distribute themselves in the line of march, so that all should have assistance near them. I had a restless anxious night, thinking and dreaming alternately of Cholera, and was happy when the drum beat at three in the morning of the 6th, to prepare for another march away from Jaluab, very thankful that we had as yet escaped. I felt uneasy myself, but not sick. Before I finished my coffee, a report was brought of eight or ten men taken ill, and unable to march. These were instantly attended to, and we marched at four o’clock. In the course of half an hour, four or five more were seized, as they were moving along; many left the ranks in the dark of the morning, seized with vomiting and purging, but though instantly attended to, many died on the road side. A short time before day light, I was riding as quick as a dark morning would allow me, to the assistance of one of our European artillery, when, just as I reached him, I had scarcely time to throw myself from my horse, being seized with an uncommon nausea, and heat of stomach, with a feeling of faint-

ness, accompanied with giddiness, and a sense of fulness in the head. In the course of that day's march we had upwards of one hundred and thirty seized, and of these thirty died before sun-set. This was in a total of four thousand and five hundred, including followers of all descriptions. If this was contagion, it was certainly so *sui generis*. We could not march again for a week. The cases, however, diminished daily in number and malignity. We had it again very severely in crossing the River Godavry, at the town of Kair, which had suffered so much, that at this time it was nearly deserted.

"I had a second attack about this time, brought on by fatigue,—it was equally sudden, being seized while in the performance of my duties in the hospital tents, at a late hour at night. The disease appeared at this time to be travelling in a south east direction, at the rate of from six to twelve miles a day. Sometimes we got a-head of it, and there were no cases in the adjacent villages. At other times, we found they had it a day or two before we reached them. There was not a single medical attendant attacked but myself, nor were the sick, and wounded, and convalescents, who had been two nights in Jaluab after the disease commenced, attacked in greater proportion than those who had not crossed the River, and never came nearer than two or three miles. At Hydrabad it attacked the people in a large bazaar outside the city, and carried off thousands long before it attacked those inside. There was a constant communication.

"In one of our visitations, two or three companies on the right of the Line were attacked, and there it continued for upwards of a month, without attacking a single individual in the lines of the other companies. They were daily exercised together, went to the same bazaar for their food, and drew water out of the same well. In another visitation, the camp followers, and officers' servants, who lived in the rear of the Line, were the only sufferers. Sometimes its victims were all in a particular spot in the camp, or cantonment, from which it never spread. I knew a particular house in a cantonment, in which an officer died almost every year; and on two occasions, scarcely any one else was seized at the time. Sometimes its attacks were confined to the natives of India, sometimes to the Europeans. Particular spots and tracts of country have been affected more frequently than others. At some ferries of particular rivers, few detachments have halted without suffering. The disease has, in these cases, broken out in the tent nearest the river, first, and perhaps only extended to the third tent from the river, leaving all the rest untouched. A corps, often on a march of fifty or sixty miles, will arrive in sound health at its station; but at the end of a week, or perhaps two, it will break out violently, and continue in that regiment only. At other times it will extend over the whole station. A regiment is often seized on the march a few days or weeks before it reaches its destination, and may continue affected in the very centre of the cantonments, without attacking any other. At other times it appears to spread amongst the troops, the very day the regiment arrives with it. I knew a corps that, in a march of three hundred miles, lost nearly as many men and followers. Another corps followed them, on the same road, five days afterwards, and reached the same place, losing only two or three men. A company will sometimes join its own regiment from detachment, and a long time after the disease will break out amongst them—a third part of them will soon be cut off, yet not a single soldier, except that company of the regiment, will suffer. On the other hand, I have known a detachment, with the disease, arrive at a station, and, within twenty-four hours, some of the other men of the several corps have been seized. When detachments are marching, it will often leave them in a day after crossing a river, or a range of hills, or on *any* change of weather,—a change of a few miles to a high situation is often enough. The Marquis of Hastings lost, on the banks of the Sindé, about five thousand men and followers, in six days, out of a total of from eighty to ninety thousand. He moved fifty miles, to a high station on the Betwah River, after which he had not a single fresh case in camp. Col. Agnew, in the Nagpoor country, made only one short march with his detachment, who were suffering severely, and encamped on high ground, near a village, after which he had not a single case, nor did the people in the village get it. A thunderstorm has often driven the disease away. Cholera has been known to commence capriciously at half a dozen large places, from fifty to five hundred miles from each other, and leave them in the same way. It is always more violent and more fatal at first the latter cases being comparatively mild. On a second visitation it in general,

observes the same law.—I have sometimes known it mild from the beginning, in which case it continued so, and the latter cases merely a slight colic. I knew a regiment march five hundred miles north; another regiment come from the station the first was going to; they passed each other about half way, and continued on the same road.—The former corps lost one hundred men, the latter none; but had about one hundred cases of diarrhœa, which was easily cured. *The men of the latter corps were regularly examined every day, and narrowly watched, to prevent their concealing sickness.* An officer here tells me, that in 1819, a native regiment marched from Ghooty to Hyderabad. Soon after they left, they were attacked with Cholera, and in eight days lost one hundred men and followers. It was so malignant that the men fell down often while posted as sentries, and died in an hour. He followed the regiment about a week afterwards, with a detachment of half the strength, including forty European soldiers, and went the same road all the way; he found many of the villages deserted, and the bodies left unburied. Some of the Sepoys who had strayed into the jungle were discovered with their red jackets on; and one in particular, he recollects to have seen with all his accoutrements on, as if he had dropped down dead. No European was attacked. The front party had encamped, in general, near to villages, in low situations. My friend chose high places, often two or three miles from the villages, and had not a single case of Cholera all the way. At another station, the disease broke out in the town, on the right of the cantonment, and attacked the regiments in succession from right to left, disappearing in one as it appeared in another, Europeans and natives suffering in equal proportion. When the disease first came to the south of India, males were chiefly attacked, then the females, and last of all, children, who for a long time escaped almost entirely. At other times pregnancy seemed to exempt females. At another time and place, I have understood that they and young children were most liable to it. In the Eastern Division of the Bengal army, a short time before the disease broke out so violently, a detachment of cavalry and infantry, and the dromedary corps, were sent on a particular service. This detachment was reinforced after the disease had commenced at head-quarters with the remainder of a regiment of cavalry, carrying the disease with them, and suffered for some time after their junction with the party sent out, yet none of the original detachment who left before the disease commenced were affected. A detachment of yeomen had been absent on duty, for some time, prior to their own division, and were seized on the way back with Cholera, just before they joined their regiment. In the course of a week, they were all affected with it, or some modification of bowel complaint, and many died. They mixed promiscuously with the other men of the regiment, yet not one was attacked. In another detachment of the army, while they had the disease violently, they were joined by a healthy corps of irregular Horse, who continued with them during the remainder of the service, yet not one of them was attacked. It is very remarkable, that in one of the large divisions of the army in the field, in 1817 and 1818, both a cavalry and infantry regiment remained exempt from the disease throughout, while some of the other corps lost upwards of a hundred men. At Malendpoor, five hundred Horse were encamped close to our troops, while we had Cholera, yet not a man of them was seized with it, with the exception of a single individual, sent in sick from a neighbouring town, and he did not communicate it to others. At Banda, while the disease was raging violently, a whole regiment, stationed there, escaped entirely. At Secunderabad, the disease, which travelled south to Madras, in 1818, appeared to be brought north again from that place by a division, which arrived in May, 1819, and spread all over the cantonment, with the exception of the lines and barracks of H. M. 30th regiment, which were in a hollow situation on the right of the Line. Bodies of troops in motion have often been attacked, and continued to carry the disease with them wherever they marched, without giving it to the inhabitants of the country through which they passed. At other times, the villages have appeared to get it from the camps near them, as the troops moved. One or two regiments have often been attacked either in camp or cantonment, while others have escaped. At Furrukabad, a corps on duty there was severely attacked, while the six hundred prisoners, belonging to the jail, constantly employed in hard labour on the roads, were entirely exempt from it. In Kotah, a detachment of two hundred Sepoys, in the garrison, entirely escaped, while two hundred men were carried off by the disease in the town. At Huttah also, a high open town, the disease

was so severe that the place was deserted ; yet a detachment of a company of Sepoys, in a small confined fort, divided from the town only by a road, did not suffer. The disease has certainly undergone great changes in its march through Europe, and if it should ultimately prove to be contagious, I am prepared to find it so in the typhoid or consecutive form, which has been lately engrafted upon it. I may, however, add, that I have seen no proof yet that it is propagated in that way, and am content to be classed with the reasonable part of the non-contagionists, who, however, acknowledge their ignorance of the true nature of the disease."

These observations of my obliging friend are valuable on many accounts. They teach most decidedly the great fact of Cholera being an epidemic disease, resulting from localities often very minute. The fact of how much predisposition may modify the influence of the poison is also frequently evinced. I do not regret the length of this original and excellent communication, because I consider it a valuable contribution to the history of Cholera.

I will take the liberty here of appealing to the experience of the highly intelligent and judicious Mr. Fyfe, of Gateshead, who, besides his own practice, was conversant with all the other practitioners in the town. He says—

"To this day I have attended sixty-seven cases of Cholera in Gateshead, of which forty-four were single instances of the disease in families of various sizes, and many of their habitations small, dark, and ill ventilated rooms—filthy in every respect. In them there was no possibility of separating the sick from the healthy. In numerous instances, no efficient precaution could be used, beyond a superficial appearance of cleanliness, and in almost every instance the most unlimited intercourse continued ; yet I have never seen the disease attack, in succession, the other inmates, which it would certainly have done had it possessed a tenth part of that virulence of contagion we are led to expect. The timid are all contagionists : fear rivets their preconceived opinions, and prevents their assent to the soundest and most apparent doctrines. Upon a review of all the cases I have attended, and seen in the hands of others, I cannot help thinking that want of ventilation in the dwellings of the poor acts decidedly as a predisposing cause. Previous to the appearance of the disease here, I had come to the conclusion that it was not communicable, every argument on the contrary side of the question appearing to admit either of doubt or explanation. After attending sixty-seven cases, and seeing in other hands nearly an equal number, I have not observed any thing to induce a change of opinion. Cholera very frequently attacks only one person in a family. No precautions are used, yet, comparatively, it seldom spreads in the manner contagious diseases do. On the contrary, where several of one family suffer from the Cholera, they are usually seized either simultaneously, or in such quick succession, as to preclude the idea of having received it from each other. There is another observation also worthy of notice : wherever several cases occur in one family, some probable exciting cause may, in general, be observed—filth, want of ventilation, want of food, &c. In half the patients I have seen the patients lived in badly ventilated and dark houses. Two persons called Taylor died, in small, ill ventilated, dirty houses ; two Wilsons—ill ventilated, upper room used as a school ; three Robsons—low room, much crowded with furniture and beds, family all died, window never opened, number of dogs, ferrets, &c., kept, and little attention paid to cleaning ; three Crows, one son died, they lived in a small ill ventilated room, among a deal of filth ; three Coopers, recovered, live in a large family room, used as a shop, sell vegetables, &c.—Diarrhœa only ; two Wallaces—one died, a very small damp room, used as a shop, at night a sleeping room, above a common bake-house."

No man can read over this list, without seeing clearly that all the unfortunates lived in a malaria atmosphere, and that they might, in all probability, have held the same intercourse with their

infected relatives, without any danger, in well ventilated and cleanly apartments. The clear-headed statements of Mr. Fyfe speak volumes, and are worthy of the most serious attention of all interested in the subject.

Now, after all these facts, are we to pronounce the disease infectious? We have not an approach to a reason to say that it is so. The experience of India, Russia, England, and Scotland militate against it, for in all these countries, the attendants of the sick have not been attacked in a larger proportion than the rest of society, unless that attendance had been in ill ventilated places, where a malaria atmosphere was suddenly perfected; and thus are all the inhabitants of the little district exposed to disease in the same way that the people of an extended country have it, the atmosphere of which has, from inscrutable causes, become choleric. It is here that the contagionists have committed their grand error, in not distinguishing between an atmosphere imbued with disease, and the power of infecting directly by touch or close communication.

It will be seen by these observations, that the doctrine I hold is that of contingent contagion; for, undoubtedly, facts most clearly evince, that there are circumstances in which the atmosphere of places becomes so contaminated that they directly cause the disease. But this exists in Cholera to a much less extent than in typhus fever and most of our contagious diseases,—so little, indeed, that we may look on this disease as one which may be considered non-contagious, except under the combined influences of many predisposing causes in the person attacked, and the effect of an atmosphere vitiated by the emanations of accumulated disease. I think my friends Dr. Meikle and Mr. Fyfe's observations go far to prove these facts. I believe also that an accumulation of choleric fœces can produce a choleric atmosphere in their neighbourhood, and may act on the predisposed as a specific poison.

But the great and leading feature of this disease is, that it is an epidemic. It is liable, I am willing to grant, to become communicable, under highly influencing circumstances, but to so small an extent as not to be taken into consideration, when we reason on the facts in connexion with the great national interests, which are involved in the system of quarantine laws that embarrass and distract the country—which have been resorted to in the teeth of nine-tenths of the opinions of medical men, who have largely treated the disease in India and at home, and the diffusion of the principles deduced from which, has been the origin of almost all that is most horrible in the features of the present pestilence. The terror and desertion of the relatives of the sick—the lonely and absolute wretchedness of the poor, shut out, as they become, on being siezed with Cholera, from all the kindnesses of nature—the premature, indecent, and unattended funeral—the unchristian-like grave, in the fields—and the absolute desolation of the surviving relatives, are the direct progeny of this evil system of laws, which have wrought unspeakable destruction both to the resources and

morals of the country. The disease has happened to affect the poor more than the rich : degradation and shame following in its train, the people have become infuriated, they have ceased to reason, and they ask why it is that this disease affects our class only? Why is it that the disgrace of it should fall only on us? It is a contrivance of the doctors and of others to rid the world of those who are thought burthensome and useless.

A few years ago, no man would have expected sentiments so foolish as these to be entertained by the people of Scotland, even of the lowest order ; but too true it is, that these opinions are generally held with firm conviction, and hence that spirit of outrage and distrust of the medical men, which has characterized the history of this epidemic for the last six weeks.

The laws have declared the disease a plague, they have also declared it horribly contagious, and the people have felt and acted as they have done, goaded on by a sense of degradation, which they unfortunately think has been partly imposed upon them by the higher classes.

Let the mercantile part of the community, whose interests are so deeply involved, ponder well the facts I have laid before them ; and I have no fear of the result of *their* inquiries.

If quarantine regulations are necessary to prevent Cholera, they are tenfold necessary to prevent Typhus Fever, the ravages of which are vastly greater than Cholera has ever been, inasmuch as it always exists over the whole country, is very contagious, very fatal, and prodigiously extensive. A distinguished Member of Parliament has communicated to me his intention of moving for comparative returns of Typhus and Cholera patients all over the country ; and the result will unequivocally show, that, in a national point of view, the evils of Typhus are much greater than Cholera is ever likely to be. The folly of this system will then be most apparent, when it will be proved that a disease, which is confessedly strongly contagious, is allowed to ravage the country most extensively, without any legislative measures to put it down, while the community has been terrified and burthened with a mass of preventive regulations with regard to this disease, which, philosophically considered, is not at all alarming ; over which, a wise and paternal government may take the most unlimited control ; and which, even in its worst features and advanced stages, is far from being so incurable as it was thought to be.

The municipal authorities, in every community, have the power of putting down Cholera by a very inexpensive and easy process—the practicability of which I have shown, and proved most clearly in the foregoing sheets ; and if the disease is not soon banished from this country, the blood of the sufferers must rest on the heads of those who have, without an opposing effort, except the inefficient resort of a sea quarantine, allowed the disease to “grow with its growth and strengthen with its strength.” I am bound to speak with much respect of those authorities who have devised and put this measure into execution. They must have

acted on a conviction of the extremely contagious nature of this disease. They have now had time to reconsider the question; and surely will not persist in a quarantine which is *prima facie* ridiculous, when they consider that with the affected places the most unlimited communication by land is allowed.

Just views on this subject are of prodigious importance to the welfare of the commercial community, and it is the duty of government to see that the principles on which the present laws are founded, are those entertained by the great body of medical authorities who have seen the disease in both hemispheres. Be the principles I have announced, however, correct or not, experience has amply demonstrated that our domestic quarantine is totally ineffective; and surely a system should be abandoned which openly teaches all foreign nations to avoid us, seeing that we demonstrate our conviction, by our own open acts, at the same time, of the dreadful nature of this disease, and its violent contagiousness. If it is the fact, that its contagiousness is a question not yet decided, and on which high authorities differ, surely it is our best policy to adopt that course which will least militate against our commercial prosperity, and which will not aggravate and exaggerate the evil in the opinion of other countries.

Again, and in fine, let me say to the rulers of this country, a way has been pointed out to you, by which you can put this disease down. We may differ as to the mode of doing it; but there can be no doubt of the truth of the principle I have indicated. I entertain the utmost confidence in the enlightened intelligence and patriotism of our Government, and that they will eventually do all that the emergency demands (I trust before it is too late;) and it is the duty of all humane and patriotic physicians, who have studied this subject, to come forward at this crisis, to counsel and support them. My humble efforts are given with a sincere desire that they may be useful; and a conviction that Government have it in their power, if they act energetically, to deprive this disease of all its horrors, to reduce it to common Diarrhœa, and eventually to banish it.

I trust that some of the facts and reasonings I have had the honour of submitting to the nation, in this hour of emergency, may be instructive. I have much to regret that the excellent treatises of my friends, Messrs. Lizars and Greenhow, had not been published when these observations were written. Mr. Lizars' work will hereafter be the text-book in the pathology of Cholera; and I consider it nationally fortunate that a man of his genius and understanding, has, at a moment like this, bent his mind to the investigation of this all-engrossing subject. But it is pleasing to me to find, that in all essentials of theory and practice, we agree completely. I have largely availed myself of the labours of others, because I thought the public had a right to demand from one who

had been sent by a body of his countrymen to learn the practice of others in this disease, as much what *they* did, as what he thought. Though an admirer of many of these practitioners, I have not been a slavish copyist, but have thought for myself on all occasions, when I had sound philosophy on my side.*

I commit this ephemeral to the public, in the most ardent hope that it may be of some consequence to their safety; that it may diminish alarm, animate them with hope, and diffuse truth and just reasoning on a subject which has been largely beset with vulgar prejudices, groundless alarms, and empirical practices.

* For three Practical Essays from experienced and highly eminent Practitioners in the North of England, see NOTE I.

APPENDIX.

NOTE A.

To the Right Honorable the Lords of His Majesty's Privy Council.

MY LORDS,—I transmitted to Joseph Hume, Esq. M. P. on the 27th ult., a detailed Memoir on the present Epidemic Cholera, and a Plan for its instant and complete eradication, to be presented to the Central Board. I transmitted that document to Mr. Hume, because I have the honor of his personal acquaintance; but perhaps I would have acted more correctly, if I had directly sent it to the venerable and excellent Chairman of the Board, Sir H. Halford. To that Memoir, which Mr. Hume will supply, I beg your Lordships' attention.

I obtained at Tranent, near Edinburgh, obscure glimpses of a truth, which I have subsequently been able to confirm here, to the satisfaction of the most sceptical,—that Cholera *uniformly* commences in Common Diarrhœa; and I reasoned that, if we could fall upon a plan of tracing *nationally, and with absolute accuracy*, all cases of this Diarrhœa, we would put a stop to the disease; as this Diarrhœa is extremely manageable and curable.

In this way, by crushing the crysalis, we would put a stop to the destruction of the devouring fly,—to its growth and existence. I subjoin documents amply illustrative of the truth of all my positions, which I am sure will carry conviction to every unprejudiced mind, that we can arrest the progress of this terrible disease. I respectfully and humbly propose to your Lordships to subdivide the whole country into districts of 20 inhabited houses for Towns, and 10 for the Country. Out of their own numbers, I would appoint a head-man to every Town and Country district, whose duty it should be every morning to report to the nearest Magistrate, named for the purpose, or to a chairman of a Board of Health, of the state of the Bowels of his whole ward. Thus would the whole health of the empire be every morning attended to. I would cause these inspectors to make their visits twice daily, and, perhaps, in districts where much travelling may be required, would make to the head-men a small allowance for services, out of the parish rates. In the Towns, that would not be required; because, among twenty householders, one respectable man could always be obtained to act gratuitously.

I have been at much trouble in procuring the certificates herein enclosed; and anxiously hope that my labors will lead to a great and good purpose. The certificates are from a body of Gentlemen, not inferior in general intelligence, and medical acquirements, to any in the Kingdom. Indeed, in my intercourse with these most respectable individuals, since I came to sojourn among them, in this quarter, I had no feeling so much impressed on my mind, as astonishment at the extent of intelligence, zeal, and professional skill, which characterize this whole body. I have particularly to call your Lordship's attention to the immense extent of the experience of these Gentlemen, embracing a much wider field than Newcastle itself, and extending to the Collieries and Villages of this immensely populous neighborhood, which have been the favorite haunts of the disease. I shall be much honored by any communication which your Lordships may be pleased to make to me, addressed to me at Greenock; and I have the honor to be

Your Lordships'

Most devoted Servant,

JAMES B. KIRK, M. D.

Senior Surgeon of the Greenock Hospital and Infirmary.

Newcastle-upon-Tyne, 6th February, 1832.

TESTIMONIALS
AS TO THE FACT
THAT
DIARRHŒA PRECEDES CHOLERA ASPHYXIA.

*From D. B. White, M. D. Late Physician to the Cholera Hospital, Gateshead,
and Physician to the Gateshead Dispensary.*

I may here define what I mean by the premonitory symptoms of Cholera. The first and most general is Diarrhœa; the evacuations, at the commencement, of a dark brown or blackish hue, gradually becoming less and less feculent, until they assume the general appearance of dirty water. Slight cramps, most frequently of the toes, twitchings in the abdomen, with giddiness and sickness, occasionally accompany it. Within six or seven days after the cessation of such purging, when it abates without the interference of art, I should consider the requisite remedies as imperiously demanded, having witnessed several cases of Cholera occurring during that period. At a more subsequent stage of the irruption, I would call particular attention to a state directly the reverse of this, where no Diarrhœa, but obstinate costiveness prevails. Under these circumstances, purgatives, sometimes of a drastic nature, are resorted to. A favorite medicine of this kind is the Pill Cochiae, a compound of Scammony, Jalap, Calomel, and Aloes. When the bowels are acted upon by these remedies, the dejections (during this time black and horribly offensive) retain their unhealthy qualities. After a longer or a shorter duration of this torpidity of the intestines, the disease suddenly appears.

Experience, in my own practice, bears ample testimony of the danger resulting from neglect under such circumstances; and many a case of Cholera which has been set down as occurring without any premonitory symptom, would be found, upon a more minute inquiry to have been preceded in the manner described. Where the formula which I recommend has been adopted, the natural secretions have been speedily restored. When the evacuations have become healthy, I should consider the patient safe, at least until such a time had elapsed as should allow again the irritating matter to accumulate. The change from perfect to diseased action of the bowels is never so speedily but its stages may be noticed. By due attention to these indications the necessity having been duly enforced, the whole body of the attendants at the Gateshead hospital escaped; though many of them experienced such symptoms as obviously threatened the disease.

Whenever the Cholera has occurred, I have invariably found that amongst the persons engaged about the patient, or in the immediate neighborhood, the premonitory symptoms existed. Such localities should be carefully watched, and the opportunity not permitted to escape, of impressing upon the minds of those within its influence, the paramount importance of attending to those warnings already pointed out.

DAVID B. WHITE, M.D.

Late Physician to the Cholera Hospital, Gateshead.

[NOTE.—After the premonitory Diarrhœa, it frequently happens that costiveness supervenes. Of this, I have several Tranent Cases on record.—J. B. K.]

From W. S. Morson, Esq., M. D., 2 Eldon Square, Newcastle-upon-Tyne.

To Dr. J. B. Kirk, 47 Blakett Street, Newcastle-on-Tyne.

Dear Sir,—In reference to your note, I beg at once distinctly to assert, that my Assistant, Mr. Hawthorne, (who resided during the prevalence of the Cholera at Walker, and myself,) have together seen seventy-eight Cases of this Disease.

I believe I may fully assert that I have seen all these Cases, and that they were, every one of them, preceded by Diarrhœa, which might have been at first feculent, but always subsequently became whitish, similar to that appearance described as rice water. I may mention, out of these 78, Cases 16 deaths took place, in all of which the Diarrhœa was neglected, and we were only summoned to the Cases, when the stage of Collapse was fully formed, and with pulseless Arteries. Indeed this premonitory symptom has been so invariable, that I have been led to believe the Spasmodic Cholera may be effectually driven out of the country, if proper means are resorted to, to apprize the Medical Profession at large of this fact, and to warn the inhabitants of the country, of the absolute necessity of immediately and promptly applying for medical aid, when they feel the bowels yielding too frequently, more particularly during the prevalence of the Epidemic. I may further remark, that a few nights ago I wrote a letter to Sir Henry Halford, calling his attention to this fact, and trust in so doing, I may be an humble means of forwarding those beneficial measures, which you contemplate putting in force as soon as you get back to Greenock.

I am, dear Sir, very faithfully yours,
W. S. MORSON.

From Thos. Leighton, Esq., Consulting Surgeon to the Newcastle Infirmary.

The Cholera Asphyxia, which has prevailed in this town and neighborhood for some weeks past, according to my observation, has been preceded very generally by Diarrhœa, which, if carried off by proper Remedies, might have averted the Attack of Cholera. I have been consulted in a great Number of Cases of Diarrhœa, many of which were attended with some of the premonitory Symptoms of Cholera Asphyxia, such as sickness, Dizziness, Coldness, Weakness, and Spasms of the Lower Limbs, but which got well, under appropriate Treatment.

THOS. LEIGHTON,
Consulting Surgeon to the Newcastle Infirmary.

Newcastle, February 4, 1832.

To Dr. J. B. Kirk, Physician, Greenock.

*From Wm. Fife, Esq., Surgeon to the Goal, &c. &c. Westgate Street,
Newcastle-upon-Tyne.*

Newcastle, Feb. 2, 1832.

Having observed that Cases of Diarrhœa, for several days have preceded attacks of Cholera Asphyxia, I have during the prevalence of this Epidemic, thought it necessary to apprize my patients of this circumstance, so that an early attention might be paid to the disease in this stage, upon which much depends.

In several Cases of Diarrhœa and Cholera, by early attention, the progress of the disease has been arrested, where there was much reason to believe it might soon have assumed a more severe form; and this appears to be the general opinion of most of the Medical Gentlemen of this place.

To Dr. J. Kirk,
Physician, Greenock.

WILLIAM FIFE,
Surgeon to the Goal.

From T. K. Fife, Esq., Gateshead.

Gateshead, 6th Feb., 1832.

Between the 25th of December and 17th of January, 1832, I attended 65 Cases reported as Cholera. Upon an exact scrutiny, I consider 33 of these to have been Diarrhœa and 32 of Malignant Cholera: the former all recovered except one in whom consecutive Fever came on; of the latter, 15 died. Upon a review, I have not the slightest doubt but that every one of the Diarrhœa cases would have terminated in the Malignant Disease, had the symptoms been allowed to go on; and that this peculiar Diarrhœa always precedes the Malignant Cholera.

T. K. FIFE.

To Dr. J. B. Kirk, Physician, Greenock.

*From John Fife, Esq., M. R. C. S. London, Surgeon to the Eye Infirmary,
Claremont Place, Newcastle-upon-Tyne.*

Newcastle, Feb. 4, 1832.

Dear Sir,—In reply to your question as to the general occurrence of Diarrhœa, as a premonitory symptom of Cholera Asphyxia, I can declare (after having treated 579 Cases) that it obtains invariably, in a more or less rapid and profuse degree; and further, that experience has convinced me of the truth of an observation made by Dr. Barry—"Stop it, and you save your patient."

I did not believe in the correctness of Dr. Barry's observation until daily experience placed it in my mind as an established fact.

I am, dear Sir, truly yours,

JOHN FIFE.

To Dr. J. B. Kirk,
Physician, Greenock.

From James M'Intyre, Esq., M. D., 2 Eldon Square, Newcastle-upon-Tyne.

Newcastle-on-Tyne, Feb. 12, 1832.

Dear Sir,—I have much pleasure in answering your queries as to the premonitory symptoms of Cholera. The first which I have most frequently observed, is a sense of uneasiness, weight, or pressure, at the pit of the stomach, with a dry skin, and slightly discolored state of the under eye-lid. 2dly, Feculent stools with dark-colored fluid intermixed, quickly succeeded by vomiting and purging, of a light brown or rice-water appearance. In mild cases the vomiting or purging may continue from one to seven days. 3dly, In very severe cases, purging, vomiting, spasms, collapse, and death, come on in quick succession, within twenty-four hours. In the curative process I can speak with much confidence, after experience in from five to seven hundred cases, that the chief dependence is to be placed on early bleeding, of from 11 to 20 ounces, from the arm, in the first two stages. In the third stage, caution must be used not to bleed until you restore heat on the surface of the body and extremities, by the use of aromatic stimulants Anodyne Enemata. Small doses of Castor Oil and Liquor Morphia, I have found extremely useful, Excuse haste.

I remain, dear Sir, your obedient Servant,

To Dr. Kirk, Greenock.

JAMES M'INTYRE.

*From Benjamin Tulloch, Esq., M. R. C. S. London, New Bridge street,
Newcastle-upon-Tyne.*

New Bridge Street, Feb. 4, 1832.

Dear Sir,—During the prevalence of Spasmodic Cholera in this Town, and the surrounding districts, I have had occasion to treat in my private practice many Cases of Diarrhœa, which I had every reason to believe, had they not had early and prompt attention, would have degenerated into severe forms of Cholera; and in the Cases of genuine Cholera which I have seen, they have almost uniformly, been preceded by Diarrhœa. It does therefore appear to me exceedingly important to attend to the first appearance of Diarrhœa, with the view to avert the malady so likely to succeed it; but if this cannot be effected, that is, should Cholera still come on, we have the satisfaction to know that this early attention is calculated to render it a comparatively tractable Disease.

Yours, dear Sir, most truly,

BENJ. TULLOCH.

To Dr. J. B. Kirk, Physician, Greenock.

*From Wm. Hardcastle, Esq., M. R. C. S. London, Westgate Street,
Newcastle-upon-Tyne.*

Dear Sir,—I have found the attacks of Spasmodic Cholera, in almost every

Case, preceded by Diarrhœa, and am led, from experience, to conclude, that in this stage the Disease is comparatively manageable.

WM. HARDCASTLE.

M. R. C. Surgeons, &c., London.

52, Westgate Street, Newcastle-upon-Tyne.

To Dr. J. B. Kirk, Physician, Greenock.

*From S. M. Frost, and G. N. Clark, Esq. Surgeons, Newgate Street,
Newcastle-upon-Tyne.*

At the request of Dr. Kirk, to state our opinions as to whether Diarrhœa is a constant and invariable premonitory Symptom of the approach of the more formidable Disease called Spasmodic Cholera; we have no hesitation in stating it as a fact, derived from an extensive observation of this Epidemic, amounting to about 500 Cases, that on minutely investigating each Patient, we have found, almost without an exception, Diarrhœa of from one to ten or twelve days' duration, and in some few instances beyond this period. And we have every reason to believe, that, had the Diarrhœa been promptly attended to, in a great majority of Cases, the more serious consequent Disease would have been prevented, or, at least, materially mitigated.

S. M. FROST,
GEO. NOBLE CLARK. } Surgeons.

Newgate Street, Feb. 3, 1832.

*From T. M. Greenhow, Esq., M. R. C. S. London, Surgeon to the Eye
Infirmary, 17 Blackett Street, Newcastle-upon-Tyne.*

It is my decided opinion, founded upon extensive observation, that the earliest symptom of Cholera is very generally Diarrhœa, which, if attended to before the appearance of the train of Symptoms which, characterize the stage of Collapse, with much certainty admits of cure.

Newcastle, Feb. 3, 1832.

T. M. GREENHOW.

To Dr. J. B. Kirk, Physician, Greenock.

From Paul Glenton, Esq.

Dear Sir,—In reply to your inquiry, whether Cholera is frequently preceded by Diarrhœa, I have no hesitation in confirming this opinion, and when time shall afford us a more intimate knowledge of the disease, we shall find, in almost all Cases, some premonitory Symptoms. The Diarrhœa, with other Symptoms, is a manageable Disease.

PAUL GLENTON.

Surgeon to the Cholera Hospital, Sandgate.

To Dr. J. B. Kirk, Physician, Greenock.

P. S.—Medicines have been supplied from the Sandgate Hospital, for the premonitory Symptoms, particularly Diarrhœa, during the eight weeks' prevalence of Cholera, to a thousand of persons, and with very general benefit.

*From Chas. Henzell, Esq., M. R. C. S., London, Percy Street,
Newcastle-upon-Tyne.*

I have had considerable experience in treating Cases of Cholera, and in common with my brethren in this District, have observed that Diarrhœa very generally precedes the Disease; and I have found that Diarrhœa is a manageable complaint.

C. R. HENZELL, Surgeon.

Feb. 3, 1832, 18 Percy Street, Newcastle.

To Dr. J. B. Kirk, Physician, Greenock.

*From Wm. Nesham, Esq., M. R. C. S., London, Pilgrim Street,
Newcastle-upon-Tyne.*

Newcastle, Feb. 3, 1832.

During the existence of the late epidemic in this town and neighborhood, viz. Spasmodic Cholera, of which I have treated upwards of 100 cases, I have particularly remarked, that, in by far the greater number, Diarrhœa preceded Cholera, and, when this was early attended to, the disease, if not prevented, was very greatly modified.

104 Pilgrim Street.

WM. NESHAM, Surgeon,

To Dr. J. B. Kirk, Physician, Greenock.

From W. Dawson, Esq., M. R. C. S., London, Side, Newcastle-upon-Tyne.

From my experience in the treatment of Cholera, I am able to state that Diarrhœa generally precedes Spasmodic Cholera for some days, and that, if treated properly, it can in general be cured, and, if not so, the succeeding Cholera will be greatly mitigated. My experience in the disease has been considerably extensive, having officiated as Surgeon to the Parish and Cholera Hospital of St. Nicholas. I have treated upwards of one hundred cases.

WM. DAWSON, M. R. C. S. London.

To Dr. J. B. Kirk, Physician, Greenock.

From James Edgcome, Esq., M. R. C. S., London, Blackett Street, Newcastle-upon-Tyne.

The result of the experience I have had in observing the progress of Cholera, enables me to state, that in the great majority of Cases, Diarrhœa has preceded the more formidable attack, varying in its duration from a few hours to several days. This Diarrhœa is nearly always manageable; and it appears to me a matter of deep importance that some efficient plan should be laid down, by which, at this critical period, the existence of apparently trivial bowel affections may be ascertained—for, under present circumstances, nearly every medical man has to deplore that application for professional relief is too frequently deferred, until this premonitory stage has been succeeded by the appalling symptoms of Spasmodic Cholera.

JAMES EDGCOME, Surgeon.

Newcastle-on-Tyne, Feb. 4, 1832.

To Dr. J. B. Kirk, Physician, Greenock.

From Chas. Larkin, Esq., M. R. C. S., London, 47 Cumberland Row, Westgate.

Having been appointed by the Parochial Board of Health, visiting Surgeon to the Township of the Westgate, a suburb immediately adjoining the Town of Newcastle, I am enabled to bear attestation of the fact, that, in the great majority of instances, Cholera is preceded by Diarrhœa, as its premonitory symptom, and that, in this early stage, the disease is easily capable of being arrested by medicine. A visitation of this Township was ordered by the Board of Health, three times in the week,—an arrangement which enabled me to arrest the disease in its very commencement. The consequence of this arrangement has been, that only two fatal cases of Cholera have occurred in the Township, the fatal nature of both of which cases, was owing to the negligence of the parties in not sending for timely relief. The population of this Township amounts to upwards of three thousand persons.

CHARLES LARKIN, M. R. C. S., London.

47 Cumberland Row, Westgate.

Feb. 6th. 1832.

To Dr. J. B. Kirk, Physician, Greenock.

From Henry Brady, Esq. M. R. C. S., London, Gateshead.

To Dr. Jas. B. Kirk,

Gateshead, Tyne, 2 Month, 4th, 1832.

Esteemed Friend,—In the course of my experience as regards this disease (Malignant Cholera) I have invariably found that Diarrhœa, of from one to six days standing, has been its precursor, and that by promptly checking this premonitory stage, you in all probability save the victims from its direful influence.

I am thy sincere Friend,

HENRY BRADY.

P.S.—I have had under my own care during its prevalence here upwards of 100 cases.

From Joseph Knaggs, Esq., M. R. C. S., London, Gateshead.

I beg to state, wherever I could ascertain from my patients, Diarrhœa has at least existed from one day to ten, previous to the assumption of Cholera. The number of cases I have witnessed amount to 135 in my own private patients, as reported to the Board of Health of Gateshead.

I beg to subscribe myself your obedient Servt.

JOSEPH KNAGGS, M. R. C. S., &c.

To Dr. J. B. Kirk, Physician, Greenock.

From Fred. W. Wilson, Esq. M. R. C. S. London.

Newcastle-upon-Tyne, 6th Feb. 1832.

Diarrhœa of a severe kind coming on suddenly with pain, generally occurs previous to the accession of Cholera; which is curable by gentle laxatives, magnesia and rhubarb, and small doses of opium, and castor oil, and keeping warm in bed. These are the premonitory symptoms of Cholera.

FRED. WM. WILSON, M. R. C. S. London.

To Dr. J. B. Kirk, Physician, Greenock.

From D. Macallum, Esq., Licentiate, R. C. S., Edinburgh, 18 Blackett Street.

From very anxious and minute inquiries into the subject, I am perfectly convinced that Diarrhœa is the almost constant precursor of the more severe form of Cholera Asphyxia. That in some cases we are enabled to trace its progress by watching the appearances of the dejections, which are at first dark colored and feculent, becoming gradually paler, then white, and lastly colorless like rice-water. Sometimes Diarrhœa ceases suddenly, and in a day or two recurs with all the aggravated symptoms of Cholera. In its first stages it is easily curable by proper means, and it is certainly of the highest importance, that every publicity be given to the knowledge of these facts throughout the whole Empire. I have seen upwards of 40 cases of Cholera Asphyxia, and 60 cases of Choleric Diarrhœa.

DUNCAN MACALLUM.

18 Blackett Street, Feb. 2, 1832.

To Dr. J. B. Kirk, Physician, Greenock.

From John Baird, M. R. C. S., London—Surgeon to the Newcastle Infirmary, Northumberland Street, Newcastle.

Newcastle, Feb. 4, 1832.

My dear Sir,—You have expressed a wish that I should give you some account of the symptoms which I have usually observed to precede the more marked stage of Cholera Asphyxia; and I shall now endeavor to comply with your request.

The most common symptom which I have ascertained to precede the blue stage of Cholera, is Diarrhœa, for upon questioning the patients I have attended, they have all confessed to have labored under such a state, two or three days before they were confined to the house. This early symptom is generally accompanied with tinnitus aurium, nausea, and disinclination to food, also slight nervous twitching in the extremities. The heat of the skin is below the usual standard. The first dejections from the bowels are usually described to be copious and sudden : as the Diarrhœa continues the motions become of an aqueous nature, pale in color, and are unaccompanied with griping. This stage is very manageable, and generally yields to the following treatment. The patient may be placed in a vapor Bath, or should that not be at hand, he may be wrapped in warm blankets. A dose of Calomel will next be of use, succeeded by a dose of Castor Oil, or a draught composed of Magnesia, Rhubarb, and Water, made warm by the addition of any aromatic. This will generally be found sufficient to relieve the early attack. But should the Diarrhœa continue, as well as the painful sensation of the muscles, warm diaphoretics may be given with advantage. I have found the exhibition of Pulv ; Ipecac : comp : very useful. Cases which I feel certain would run on to the more formidable developement of Cholera Spasmodica, may often be arrested at this stage ; and when the symptoms are somewhat more formidable, venesection will be found to do good, particularly when retching or vomiting have taken place. It is desirable that the disease should be met by the exertions of a Medical Practitioner at the commencement, because when the functions of the body have been sealed up by the spasm, the result becomes much more uncertain. Even after the Spasm is relieved, the patient, during the process of reaction, is exposed to much danger. This will be qualified according to the length of time Asphyxia has existed. I mean, that if the patient is placed under medical treatment before the pulse has entirely left the extremities, the case will be more curable than another, wherein the pulse at the wrist has long ceased, and the tongue, breath, and surface have become cold, and life may be said to be on the very wings of departure.

I remain, my dear Sir, yours very faithfully,

JOHN BAIRD.

To Dr. J. B. Kirk, Physician, Greenock.

From Thomas Annandale, Esq., M. R. C. S. London, and Edinburgh.

Dear Sir,—In answer to your queries, I beg to state, as the result of my experience in the treatment of Cholera, that Diarrhœa has invariably attended it as a symptom (with one exception.) I have had many opportunities of treating this disease in the state of collapse, and have found large doses of Calomel, administered every hour, to act more beneficially than any other stimulant.

THOMAS ANNANDALE,

Member of the Royal College of Surgeons, London and Edinburgh.

To Dr. J. B. Kirk, Physician, Greenock.

FROM THE PRACTITIONERS
OF THE
INFECTED DISTRICTS OF SCOTLAND.

From John Lizars, Esq., Professor of Surgery to the Royal College of Surgeons, Edinburgh.

Edinburgh, 38 York Place, 13th February, 1832.

My dear Sir,—I cannot permit you to leave Edinburgh without adding my feeble testimony to the important conclusion at which you have arrived—viz., that all the cases which I have seen of Cholera in Tranent, Prestonpans, and Fisherrow, have been preceded by Diarrhœa, of more or less duration. This conclusion I deem important, because it is as evident to me as to yourself, that any Board of Health in a city or town, may inquire into the condition of the people's health, with as much ease as they now inquire after their food and clothing, and thus arrest the disease in its germ. I consider that no one but yourself could have prosecuted this appalling disease with so much enthusiasm and perseverance; and hence the satisfactory explanation of the disease which you have acquired. I feel confident that your arduous exertions will be justly estimated by the public.

Yours most sincerely,

JOHN LIZARS.

To Dr. J. B. Kirk, Physician, Greenock.

From George Meikle, Esq., late Surgeon to the Honorable the East India Company.

Edinburgh, 13th February, 1832.

Dear Sir,—From inquiries made, and what I have observed of Cholera Asphyxia, in this country, during its prevalence at Haddington, Tranent, and other places which I have visited, by far the greater number of cases were preceded by some premonitory symptoms, such as Diarrhœa, Indigestion, or a distressing, uncomfortable sensation in the bowels. I may add that in India, when the disease was very malignant, in many cases no warning was given; in others Diarrhœa, and in some Indigestion and the vomiting of the food, such as rice, as if it had been just swallowed. In some mild visitations of Cholera the disease seems to have degenerated into slight Diarrhœa, which was easily cured by a dose of Castor Oil and Laudanum, or into Colick, which was relieved by a spirituous cordial. I shall take an early opportunity of sending you some facts upon this subject, which I can easily obtain from my medical friends here, who like myself were in the midst of Cholera for many years.

I am, dear Sir, yours respectfully,

GEORGE MEIKLE, Surgeon, E. I. C. S.

To Dr. J. B. Kirk, Physician, Greenock.

From David Colville Carruthers, M. D., attending Physician to the Dundee Cholera Hospital, Member of the Royal Medical and Royal Physical Societies, Edinburgh.

Monday, 13th Feb.

I hereby certify that almost all the cases of Cholera Asphyxia which I have witnessed in Sunderland, Newcastle, North and South Shields, Edinburgh, Musselburgh, Prestonpans, and Tranent, have been preceded more or less by Diarrhœa. My observations were made during the period of six weeks spent in the above mentioned seats of Cholera.

DAVID COLVILLE CARRUTHERS, M. D.

To Dr. J. B. Kirk, Physician, Greenock.

From Thos. Cunningham, Surgeon, R. N.

Tranent, 13th Feb. 1832.

Dear Sir,—I have now attended upwards of 50 patients affected with Cholera Asphyxia, and in all I have found Diarrhœa to precede it from a few hours to eight or nine days. When called in during the stage of Diarrhœa, I have found it quite a manageable disease, with a few exceptions.

Yours very truly,

THOS. CUNNINGHAM, formerly Surgeon, R. N.

To Dr. Kirk, Physician, Greenock.

From Geo. Willison, Licentiate of R. C. S. Surgeon, Edinburgh.

Tranent, 13th Feb. 1832.

Dear Sir,—I have attended from 40 to 50 cases of Cholera in this place, and upwards of 100 cases of Diarrhœa, and in all the cases of Cholera without exception, they have been preceded by Diarrhœa; this fact has been without one exception. There is no fixed period of the duration of the premonitory Diarrhœa—the disease existing from a few hours to seven or eight days. This Diarrhœa is a manageable disease with few exceptions.

GEO. WILLISON, Surgeon.

To J. B. Kirk, Physician, Greenock.

From James Seton Esq., Surgeon, Licentiate, R. C. S., Edinburgh.

Tranent, 13th Feb. 1832.

Dear Sir,—In all my cases of Cholera, which are between 50 and 60 in number, I have always observed Diarrhœa to precede it, and in general have found this premonitory disease to be tolerably manageable.

Yours, truly,

JAS. SETON, Surgeon, Licentiate, R. C. S. Edinburgh.

To Dr. J. B. Kirk, Physician, Greenock.

From D. M. Moir, Surgeon, R. C. S., Edinburgh, and Uniacke Ronayne, M. D.

We have not yet met with a case of Cholera which did not commence with Diarrhœa—and this generally without griping.

DAVID M. MOIR,

UNIACKE RONAYNE, M. D.

Musselburgh, 12th February, 1832.

From Alex. Campbell, Esq., R. C. S., Edinburgh.

Since I was appointed to take charge of the Cholera Hospital in Tranent, under the superintendence of Dr. Morries, I have witnessed 100 cases of the disease, and have treated 50; and as accurate reports have been kept of each, I can positively say, that in almost every instance Diarrhœa, from one to ten days' duration, has preceded the stage of collapse; and in cases of sudden and severe attacks, there have existed, independently of Diarrhœa, for some hours, sufficiently well marked symptoms, to denote its approach.

ALEXANDER CAMPBELL, Surgeon.

From George Steele, Esq., Surgeon.

Craighall, near Musselburgh, 13th February, 1832.

My dear Sir,—Almost every case of Cholera which has come under my notice, since its occurrence in this neighborhood, has been preceded by Diarrhœa. In some instances I have known this relaxed condition of the bowels to continue at

intervals, and with greater or less violence, nor fourteen days: in others, not more than six or eight hours.

I have met of late with many cases of troublesome and obstinate Diarrhœa, and I have every reason to think that a large proportion of these, had they been left unaided, would have terminated in unequivocal Spasmodic Cholera.

My dear Sir, yours very truly,

Dr. Kirk.

GEO. STEELE.

From W. Dunbar, Esq., M. D.

Musselburgh Cholera Hospital, 12th Feb. 1832.

I hereby certify, that in the greater proportions of Cholera which have come under my observation, there was previous Diarrhœa for several days, or even weeks.

W. DUNBAR, M. D.

House Surgeon to Musselburgh Hospital.

To Dr. J. B. Kirk, Physician, Greenock.

From T. S. Maccall, Esq., Surgeon, R. C. S. Edinburgh.

Musselburgh Cholera Hospital, 12th Feb. 1832.

I hereby certify that I have found, in the greater number of cases that have come under my care as House-Surgeon of the Hospital here, and also in those I have treated out of the Hospital, that Diarrhœa for some days was generally present.

T. S. MACCALL, Surgeon.

To Dr. Kirk, Physician, Greenock.

From Henry Sanderson, Esq., R. C. S. E.

Musselburgh, 12th Feb. 1832.

I hereby certify that during the prevalence of Cholera, the greater number of cases were preceded by Diarrhœa—which I have found peculiarly predisposed them to the disease.

HENRY SANDERSON, Surgeon.

To Dr. J. B. Kirk.

From James Mollison, Esq., M. D. Edinburgh.

Edinburgh, 11 Picardy Place, Feb. 14, 1832.

Dear Sir,—I had a good opportunity of observing that you have made great sacrifices in more respects than one, in most active, persevering, and devoted exertion, in acquiring an immense variety of interesting and highly important facts personally, and from many very intelligent Medical Gentlemen in the North of England and various other places, on Epidemic Cholera. This I did when meeting with you a considerable number of professional men of eminence here, and in the neighboring towns, visiting with you a variety of Cholera cases, and afterwards hearing from you, with much interest, the range of new ideas and information you have gleaned; the comprehensively beneficial principle you have been promulgating, and the plan you have so far already developed. I know you are borne out in this by the observation of various of the most intelligent of the India practitioners and writers, as well as of those above alluded to; and I find at this moment, and for sometime in my own practice, a tendency to Diarrhœa. In such as were formerly subject to an obstinately shut state of the bowels, actual Diarrhœa, with giddiness, headache, nausea, feeling of cold without shivering, an altered desponding, and somewhat extenuated appearance of feature; again, an easily irritated state of the bowels, so as to urge on the Diarrhœa by a tea-spoonful or so of Gregory's Powder to 12 dejections; and lastly, in the case of one gentleman I visi-

ted to-day, the dull headach with some giddiness and Diarrhœa. I have required to use little else than Castor Oil, Dover's Powders, with an aromatic and mild cordials, the pulse having been little excited. Wishing you all the encouragement you have so dearly earned.

I remain, my dear Sir, ever yours faithfully,

JAMES MOLLISON.

To Dr. J. B. Kirk, Physician, Greenock.

To the Editor of the New North Briton.

Sir,—I look forward to the publication of a document, from the pen of Dr. Kirk of Greenock, which, I trust, will prove more beneficial to the public than all that has been published on this direful disease, for he has most assiduously and indefatigably investigated it in Sunderland, Newcastle, and this neighborhood, and nearly paid the forfeit of his life by his unwearied labors. I have spent some hours, for several days, in this scientific gentleman's company, listening to the different theories and modes of practice of the various talented practitioners of Sunderland, Gateshead, and Newcastle; and from all these, together with his own personal observations, Dr. Kirk has come to the important and invaluable conclusion, that every case of cholera, however severe and malignant, has been preceded, for an hour or two, or even for days, by Diarrhœa, or an ordinary bowel complaint. I have before me the testimony of upwards of twenty of these respectable practitioners to this fact, which I shall lay before your readers, in your next number; and I have also the testimony of Dr. Carruthers of Dundee, of Drs. Moir, Sanderson, M'Coll, and Dunbar, of Musselburgh, together with that of Drs. Cuninghame, Seaton, Willson, and Campbell, of Tranent. The practitioners of Newcastle observed all their patients laboring under Diarrhœa for six months previous to the irruption of Cholera. This, therefore, reduces Cholera in its commencement, or first stage, to a very mild and manageable disease, and ought to enable us to expel it from our shores with as much certainty and confidence as that pestilence, small-pox. The respective Boards of Health have only to recommend to their numerous individual members to subdivide their districts into so small bounds that each may be enabled to visit every head of a family, and to inquire into the condition of the health of its members; and on learning that any one is troubled with a bowel complaint, to recommend the taking of a dose of castor oil, or calomel and aloes. In many districts an advertisement to this end, in different places, from time to time, would have the desired effect. In others, the selecting the intelligent, and communicating this information to them once a-week, fortnight, or month, would suffice. In no other way do I see that this scourge of mankind can be expelled; for I am thoroughly convinced, from what I have read, from what I have learned from Dr. Kirk—and that, I am candid to acknowledge, has been great—and from what I have personally witnessed, that Cholera Asphyxia is fever superinduced to a bowel complaint, or fever attacking a constitution with bowels deranged or predisposed from atmospherical influence. The constitution of the individual is first modified by the peculiarity of the atmosphere, which is unseasonable, being warm, moist, and charged with electricity; this relaxes his frame, and deranges his digestive organs, particularly his liver, just in the same way as the climate of India modifies the European constitution. Dr. Baird of Newcastle considers that the atmospherical influence hangs long over the individual, giving rise to the gastric symptoms before the irruption of Cholera. His bowels become loaded with food and fæces, which irritate them, and generally produce Diarrhœa; and, while thus conditioned, he exposes himself to cold, which checks the cutaneous functions, when a cold stage, similar to that of ague, takes place; the nervous system is excited, its expansive cutaneous distribution is chilled, and is unable to perform its healthy functions. The cutaneous capillary exhalents are shut up; they also are unable to perform their functions; a concentration of the nervous and circulating powers takes place; a reaction is attempted, but their cutaneous branches being rendered torpid by the cold, they produce a determination to the ganglionic or sympathetic system of nerves, and their organs, the abdominal viscera, which have been previously excited; and hence the spasms, the dejections, and the cold shivering. Dr. Baird considers there is spasm of the ventricles of the heart, the lungs, and the abdominal viscera. The blueness of the skin is consequent on the blood not being propelled with vigor through the lungs

by the heart, both of these organs being rendered apathetic from the state of the ganglionic system. The brain becomes congested, partly from the interruption to the cutaneous functions, as in all fevers, and partly from the heart continuing to propel the blood longest along the carotid arteries.

The treatment which I very briefly recommended in your paper of Saturday, 28th January, is corroborated by that pursued by Dr. Kirk and the medical gentlemen of Newcastle, &c. It will be recollected that I advised large warm water enemata with laudanum, as much as three or four pints, with a tea-spoonful of laudanum. Dr. Kirk says that Dr. Baird substituted tobacco for the laudanum, using sometimes half a drachm, at other times two scruples, and on other occasions two drachms; and this practice was found much more efficacious in relieving the spasms and collapse than the laudanum. He observed the tobacco injection to subdue the cramps and the vomiting, restore the circulation of the heart, and the various secretions, especially that of the kidneys. So great was the degree of spasm in some cases, that even after death, Dr. Kirk could not eject the bile out of the gall bladder along the ducts. In one instance he continued the pressure until the gall bladder ruptured.

This practice was latterly followed also by Dr. Macallum. Dr. Kirk himself employed it with great success, and recommends, after the first enema has remained for an hour, and no reaction taken place, that it be sucked off by the enema pump, and a second, and even a third, enema of plain hot water, be thrown up. The enemata can be always prevented being rejected. Dr. Macallum at first employed enemata of hot water and soap, one after another, until reaction was established. The water should be as hot as the hand can bear, and it is worth mentioning, that after this has been retained for an hour in the intestines, it comes off quite cold. By filling the whole large intestine, we apply heat and anti-spasmodics, to a large surface of the ganglionic system of nerves, which is the chief seat of the spasm. Dr. Kirk, combined from 4 to 6 ounces of brandy with the hot water and laudanum or tobacco.

My second remedy was scalding water to the skin of the belly. This was almost invariably done by the practitioners at Newcastle, &c., with this modification, that they took the linen rag out of the boiling pot with two pieces of wood, and applied it.

My third remedy was mustard to the spine, hands, and feet. Dr. Kirk applied the actual cautery in a peculiar manner, with advantage.

My fourth remedy he modified by giving much smaller doses of calomel, every two hours, with a very small portion of opium, together with teaspoonfuls of brandy; for all the practitioners of Newcastle, and particularly Dr. John Fyfe, observed that reaction was not in proportion to the stimuli employed, but in proportion to the collapse.

My fifth remedy was bleeding. That, Dr. Kirk says, ought to be done moderately, and only after reaction, or before collapse has taken place. Dr. Kirk particularly recommends the examination of the urinary bladder whenever the stage of collapse passes off.

Many who died of Cholera at Newcastle, &c., were dissected, and some even 16 hours after death, without propagating contagion; indeed, with the exception of one, all the practitioners, upwards of 50 in number, are non-contagionists. Dr. Fyfe of Gateshead found in 67 cases that 44 of these were single individuals of families, varying from three to eight, many of them sleeping in the same bed with the infected. There was unlimited intercourse; nay it was impossible to separate the diseased from the healthy. Dr. Kirk states, that when a number of a family suffered, they were either attacked simultaneously, or in such quick succession as to preclude the possibility of being affected by contagion or infection. One family who had been in want received a pig, which they greedily devoured, and were all attacked, first with Diarrhœa, then Cholera, and died. Dr. Fyfe of Gateshead found the disease to attack the following classes—5 were very drunken, 12 rather drunken, nine of whom were men; 31 sober, 12 in want, four of whom were men; 4 boys 6 girls, and 1 child. Those who lived in houses secluded from the light, and colliers, were very subject to Cholera. Dr. Kirk remarked that the body became warm 6 or 7 hours after death, when the patient expired in the stage of collapse.

I am, Sir, &c.

JOHN LIZARS.

Professor of Surgery to the Royal College of Surgeons, Surgeon to the Royal Infirmary, &c.

[We are given to understand, that Dr. Kirk, in his anxiety to arrive at the important conclusion he has come to, has made great sacrifices in many respects, but has acquired a mass of interesting and useful facts, not only from the medical gentlemen of Newcastle and elsewhere, but from his own personal observation. His plan for the prevention of Cholera is only hinted at in Mr. Lizars' letter, Dr. Kirk having matured one, which, he trusts, will suit the prejudices of all ranks and classes. We should consider the Doctor ably qualified, from his scientific acquirements, extensive experience and observation, to make a survey of the districts throughout the country, and organize his own plan.]—*New North Briton*.

Since the appearance of the preceding Testimonials, which were published in a separate sheet, I have received, amongst others, the following very grateful proof of the approbation of Dr. Christopher Johnson, of Lancaster, in favor of the plan now submitted.

Lancaster, March 3, 1832.

Sir,—I beg you to accept my best thanks for the favor of your paper, which I had the pleasure to receive yesterday.

Our spirited representative, Mr. Stewart, had obligingly furnished me with your former circular, and I felt it my duty to put it into the hands of several medical friends in this town, all of whom immediately recognized the value of your principle. I also took the liberty of communicating to a newspaper an extract of your letter; which, I am happy to state, has contributed very materially to reassure the reading public of this district. Several gentlemen, connected with large establishments, have expressed themselves much pleased with your views, and have taken measures for insuring of strict notices of failure in the general health, and especially of tendency to gastric disease, among those under their superintendence.

It would be presumptuous and impertinent in one who, happily, has only contemplated the disease at a distance, to intrude himself among those who have seen it; but, after perusing some thousands of pages in different languages, I have found nothing so satisfactory to myself, or so promising of practical benefit to mankind, as your Memorial to the Council, and the Testimonials you have subsequently collected. I am glad to find my own sentiments, hazarded on the first perusal of your paper, confirmed by such authority as that of Mr. Lizars.

Having compared your principle to that established by Jenner, and having done this in a way not to be misconstrued as flattery—for I could not expect that you would ever hear of me at all—it only remains for me now to repeat my continued reliance on your general rule, and my firm belief that the exceptions will be found very rare, indeed, on candid and rigid investigation.

I remain, Sir, your very obedient Servant,

CHRISTOPHER JOHNSON.

NOTE B.

Mr. Baird of Newcastle's opinion respecting the Pathology and treatment of Cholera.

I have much pleasure in laying, verbatim, before the reader, information and cases furnished me, by J. Baird, Esq., of Newcastle, on the use of tobacco in Cholera. The ingenious and retiring author has not pushed his discovery to general publicity so rapidly as some men would have done. From considerable personal experience, I am satisfied, that the practice is an excellent one.

As the views of this gentleman, respecting the nature and treatment of Spasmodic Cholera, differ materially from all the speculations with which I am acquainted, respecting this singular malady, I consider it necessary briefly to state the reasons which induced him to adopt the practice detailed in the following cases.

When this disease invaded our shores, his mind became interested in coming to some conclusion upon what principle the developement of so extraordinary a malady depended. He could not make up his mind as to its infectious origin, having observed many circumstances to militate against that hypothesis. His train of reasoning led him to conclude that the disease was conveyed by some peculiar state of atmospherical influence. What that state or condition of the air is, which can produce effects so striking upon human life, he pretends to no means of demonstrating; but it appeared to him that the impression made upon the predisposed victims, arose from some peculiar state into which the great nerves of the body were put, so that they became unable to maintain that healthy control over the muscular and secreting organs of the animal economy, upon which the continuation of life is known to depend.

He believes that a modified state of atmosphere, such as has been hinted at, long presides over a devoted spot before the burst of Cholera takes place; and that this modified state gives rise to gastric affections, and to many of the different types of fever; renders chronic complaints more untractable, and is unfavorable to convalescence. Thus it would appear that the approach of this state of malaria, places the constitution of the predisposed in a state of morbid action, which the efforts of the *vis medicatrix naturæ*, with the assistance of art, are incapable of bringing back to health again. An opportunity occurred of practically exhibiting the truth of his theory, if there was any foundation for it, by the examination of the body of a man who expired after a short but severe attack of this disease. He had all the external evidences of Cholera, such as coldness of the surface, Vox Cholerica, cold breath, cessation of pulse in the extreme arteries, corrugation of the skin of the hands and fingers, blueness of the nails, eyes sunk, with the palpebræ black, and drawn within the orbits, lips and countenance very livid. He had no vomiting—indeed, it could not be excited by any means. There was no purging, although before he was seen he must have had profluvia from the bowels, as, upon dissection, they were quite empty. This man lingered about six or seven hours after he saw him, without any change in his appearance. The body was inspected next morning after his disease. The stomach was observed to be full of fluid, resembling water gruel, with two or three brown portions, resembling some kind of food. The gall bladder was distended with olive colored bile, but it was prevented from flowing into the intestines, by spasmodic action, during life, having rendered the duct impervious. The large intestines were spasmodically contracted, and empty. The urinary bladder was firmly contracted, upon a small quantity of urine. His previous theory was thus to a certain degree confirmed by this examination, and he has since observed from the reported examination of other bodies who died in Cholera, that the gall ducts were impervious in consequence of strong spasm. He was therefore led to infer that the action of the ventricles of the heart was arrested by spasm, and that the general suspension of the secretions must depend upon the branches of nerves distributed to the different organs being in a similar condition. Having, as he supposed, discovered the source upon which all the phenomena of Cholera appeared to depend, it became necessary to adopt some other mode of treatment than that which had hitherto been recommended. The simple manifestation of collapse and atony, had too much influenced both writers and practitioners in their attempts at relieving the victims of Cholera. Now, it appeared evident, that in a person full of health previous to being so suddenly plunged into a state of collapse as patients are in Cholera, the transition cannot arise from direct debility, but must depend upon some indirect cause, and as soon as that cause is removed the organs will be ready to act, as their healthy functions are not destroyed, but merely arrested. With these views, he could not avoid the impression that incalculable mischief had arisen from the adoption of remedies, founded upon the apparent state of collapse of the patient. The quantity of stimulants, and the excess of calomel, which entered into the treatment of the worst cases of Cholera, was a plan, in his mind, much to be regretted; and here, he insisted, that unless spasm existed, the quantity of calomel exhibited must, in far more cases than it has done, have produced some manifest impression upon the secretions it was meant to stimulate. This circumstance becomes, therefore, a proof of the probable correctness of his opinion of the pathology of Cholera. To this he added the idea, that, if his opinion had been at variance with the fact, the powerful remedy he had adopted must of necessity have hurled the patient into the grave; but the cases which I have appended will convince the unprejudiced, that not only does it act with perfect safety,

but that it is a curative agent when properly administered, of the greatest power. The remedy which he considered most likely to meet his views, was the infusion of tobacco, to be administered as an enema. How it has answered his expectations, will be learned by a perusal of the cases subjoined. I have stated the formula which he used; but, since he has obtained greater confidence in the practice, he is not afraid to give a larger dose, when it is indicated by the severity of the cramps, or other circumstances. The effects produced are not alike in every subject, but, generally, they may be looked for in the following succession:—The first change which takes place after the exhibition of the enema is restoration of the circulation, as evinced by the increase of volume in the pulse, and restoration of the livid parts to a more healthy hue. The cessation of cramps next ensues, and afterwards the suspension of vomiting and purging. Last of all the re-establishment of the biliary and urinary secretions. He has almost invariably remarked, that after the spasms are relieved, the bladder recovers its sensibility, and there is urgent desire to pass urine long before any has been secreted. He considers the vomiting and purging to be vicarious exudations, which are set up by the system to relieve the blood from excrementitious qualities, during the embargo laid upon the secreting organs; the violent desire for cold water during the disease, seems to show that this exudation has been in excess. A number of speculations have existed since the origin of this disease, as to the advantage of injecting the veins with different fluids to alter the state of the blood, which is congested in the venous circulation. A moment's dispassionate consideration must demonstrate the futility of such an idea. The reason of the blood being left in the state we find it in the veins, arises from the ventricles of the heart being placed in an almost perfect state of systole, when spasms occur; and if the blood is much assisted in its return to the heart by a hydraulic power, that action must cease when there is no perfect vacuum formed to cause its operation. You may, therefore, distend the veins by heterogeneous fluids, or alter the colour by oxygenated salts, or solutions of opium, but still the blood will not be altered unless you have an arterial circulation through the lungs. All attempts to alter the blood in the veins, consequent upon asphyxia, are useless, and the lungs, during the presence of true malignant Cholera, are inoperative, as is evinced by the cold breath: because the action of spasm has rendered the pulmonary circulation impossible.

There has thus been endeavoured to be described the most material points which have governed Mr. Baird's views of treatment in Cholera, and I hope, when his opinion of the pathology of this singular disease has been perused, his deductions will not appear unscientific, nor his practice empirical or rash. The use of the tobacco, in my own experience, has much mitigated the severity of the symptoms consequent to severe attacks of Cholera, which are more hazardous to the patient than collapse. I am indebted for this essay, verbatim, to the talented author, Mr. Baird of Newcastle, himself. To much learning and research in his profession, Mr. Baird is characterised by a retiring modesty, which is extremely amiable, but which has hindered the extension of the value of his discovery; and I shall be happy if the publication of this essay shall contribute to cause the invention to be more generally appreciated by the profession. I found in Tra-nent and Musselburgh the most groundless stories told of the danger and inutility of the practice; but when I put them to the strict test of investigation, I found them hearsay and not observation. I have seen ten cases of the exhibition of tobacco myself, and though in two life was not saved, yet in all distinct reaction took place; and all the symptoms were improved. Mrs. M'Millan's case, though a fatal one, marked the excellence of the practice strikingly; and Mrs. M'Gregor's is a most illustrative one.

CASE FIRST.

Case of very malignant Cholera, in which all the symptoms were well marked, cured by the administration of the Tobacco enema.

Ralph Crow, ætat. 65, was taken ill about six o'clock in the morning of the 28th December, 1831. A medical friend invited me to see him about twelve o'clock at noon, when I happened to be in Gateshead, where the patient resided. He

was at that time very ill indeed, and his condition appeared certainly hopeless. His eyes were sunk, the palpebræ black and drawn within the orbits. His nose and lips livid. Tongue white and cold; and his voice quite gone. Indeed the whisper could with difficulty be understood. The skin of the hands and fingers was much sodden, and the nails very blue. Pulsation was not to be felt at the wrist, and the surface of the whole body was completely cold. The secretion of urine was entirely suspended. He was suffering from cramps in most of the muscles. There were incessant vomiting and frequent dejection from the bowels, of pellucid fluid, mixed with flakes resembling boiled rice. I had felt desirous for a day or two to observe the effects of a moderate dose of the tobacco infusion in the form of enema, in this intractable complaint. I availed myself of this opportunity, although a formidable instance to begin with. Half a drachm of tobacco, prepared with half a pint of boiling water, was administered. This was retained in the intestines. In a few minutes the skin became warm, and a clammy moisture was observed upon it. He vomited after it very copiously two or three times. About a quarter of an hour after giving the enema the pulsation at the wrist was evident. I cannot refrain from expressing my obligations to my medical friend in Gateshead, who was so obliging as to repeat the injection in the evening, because he observed the advantage of the practice in the morning. This he did of his own accord, as nothing passed between us respecting any repetition: the unfavourable state of the patient rendering it probable that it would not be required. It was observed at both times that as reaction took place, the colour of the integuments, and particularly the lips, became changed to a more healthy hue.

Dec. 29, 12 o'clock.—Revisited the patient, whom I found much better. The warmth and natural hue of the skin had in a great measure returned. The countenance was improved; pulsation at the wrist distinct and regular; vomiting and purging had ceased; tongue warm and less white; muscular spasms relieved, and he had enjoyed some quiet sleep. Other remedies were now exhibited to act upon the secretions, which all went on progressively improving. This man during many days retained the appearance of having recovered from a dreadful state of disease, but was completely restored to his strength in a few weeks.

CASE SECOND.

Case of malignant Cholera, wherein Tobacco enema was administered with effect at the time, but the patient sunk afterwards.

Helen Douglass, ætat. 55, a very fat woman, whose occupation was to sit at a stall for the sale of vegetables, &c., in a confined filthy street in Newcastle, was attacked with symptoms of Cholera on the 2d January, 1832. The early symptoms were extreme, and sudden discharges from the bowels and stomach, of a fluid resembling rice-water. A medical gentleman was applied to in the night, but did not visit her. She was visited by me about ten o'clock of the following day. She was complaining of violent pain in the hypogastric, and epigastric regions, and in the back. Her countenance was very much sunk and livid. The hands and fingers sodden. The cellular substance of the arms was condensed and inelastic, resembling dead integument. The pulse was imperceptible at the wrist, but might be felt beating feebly in the carotids. She had passed no urine for some time; the body was very cold; and she suffered much from cramps and spasms in the abdominal muscles, and in those of the extremities. Her tongue was white, and nearly resembled white leather; and the breath was cold. An injection, containing half a drachm of tobacco in infusion, was immediately administered. About fifteen minutes after the injection was thrown up, pulsation became very perceptible at the wrist. Slight perspiration was observed about the central parts of the body, and the countenance became improved in appearance. She still was ejecting large quantities of fluid from the stomach. An hour and a half afterwards, she had vomited some yellow fluid mixed with white sediment. The pulsation and perspiration still continued. She was ordered to take five grains of calomel every hour.

Four o'clock, P. M.—The spasms have returned: pulse more feeble: still complains of constant pain in the abdomen. I attempted to bleed her from the arm, to unload if possible the venous circulation. By constant friction up the course of the vein, I succeeded in getting away about four ounces of very black thick blood, guttatim. Three scarifications were applied to the abdomen, but the blood stood in the incisions like tar. A common fomentation was directed to be applied over the abdomen. The tobacco enema was again exhibited, which produced a little faintness at the time, from which she soon recovered.

Nine o'clock, P. M.—Her countenance is better, but the pulse not quite so good: still suffers from cramps, although not so severe. Pain of hypogastric region and back, but it has abated in the præcordia. She has vomited very little; has felt frequent desire to empty the bowels. A small quantity of thin dark fluid was evacuated. As she had experienced much desire to pass urine, I placed my hand over the hypogastric region to ascertain the state of the bladder, and was astonished to find every thing about her wet and cold. Upon inquiry I found it was from the flannels used for fomentation, which were absurdly left to cool since four o'clock, until I discovered them. Take castor oil.

Jan. 4.—She has had no vomiting all night. Towards morning passed two small fluid bilious stools. Continued to complain of pain in the hypogastric region. I was prevented seeing her until eleven o'clock, when I found her sinking rapidly, and she soon after expired. I had taken a catheter with me to introduce, as I understood from my Assistant, who brought me the report in the morning, that she expressed a very anxious desire to pass urine. Finding her so near death I did not attempt it. The blood drawn yesterday was coagulated, very dark and devoid of serum.

CASE THIRD.

Case wherein the Tobacco enema was successfully administered.

William Lambert, ætat. 26. Has been out of health nearly a week with disordered stomach and bowels. Symptoms of Spasmodic Cholera made their appearance this morning, January 14, 1832. He was visited by me about midnight. I was informed that he had been taking medicine during the day, prescribed by a medical gentleman who had seen him at the period of his seizure. He was vomiting incessantly large quantities of pellucid fluid, mixed with white flakes, and passing a homogeneous fluid from the intestines. He complained of violent pain in the epigastric region. Pulse very feeble—tongue white; skin cold and dry, especially at the extremities. Countenance sunk and livid; dark areola round the eyes: great pain and oppression of the head. Tunica adnata injected. Pupils contracted. Has passed no urine during the last sixteen hours. I attempted to administer medicines by the mouth, but they were rejected violently, almost before they reached the stomach. Two scruples of tobacco infused in nearly a pint of boiling water injected.

Jan. 15, A. M.—The vomiting ceased about an hour after the exhibition of the enema, and has not returned, neither has he been purged nor passed urine. Pain and oppression of head continue. Pulse regular, and although rather feeble, yet much firmer than it was last night. Temperature of body comfortable. Fifteen grains of calomel have been taken at intervals since the enema was administered. Apply eight leeches behind the ears, and take two powders every second hour, of calomel and rhubarb, each five grains, aloes two grains, and afterwards give the diaphoretic mixture.

Eight o'clock, P. M.—Four leeches only were applied. I therefore opened the jugular vein on account of the head, but was able to withdraw no more than half an ounce of thick blood. A large blister was applied between the shoulders. Hot fomentations were directed to the denuded scalp.

Jan. 16.—Has vomited about a pint of green coloured fluid. Has had no alvine evacuation, nor any disposition to pass urine. Head relieved; and he has no uneasiness in the epigastric region. A dose of castor oil was given.

Nine o'clock, P. M.—He ejected the oil soon after it was taken. Has not passed any thing from the bowels, nor any urine. Head much relieved. Tunica adnata still injected. Pupils much dilated. Pulse 88, and firm. Take a pow-

der immediately, with calomel six grains, camphor three grains, and repeat it after two hours; half an ounce of Epsom salts in the morning.

Jan. 17.—He has not passed urine, nor any alvine evacuations. Has again vomited a quantity of green coloured fluid. Calcined magnesia five grains, powder of rhubarb five grains.

Nine o'clock, P. M.—He has taken five powders without any effect, and has not passed urine. Pulse sharp and more frequent; vessels of conjunctiva less turgid; head confused, and complains of vertigo. Take a powder every second hour of nitrate of potash six grains, calomel five grains, antimonial powder six grains.

Jan. 18.—He has taken four powders. Pulse 80—tongue clean and moist—retention of urine still continues, and he has had no alvine evacuation. Has again vomited about half a pint of dark green coloured bitter fluid. He is distressed with vertigo when he sits up. A common enema was administered this evening, and six of the compound rhubarb pills were sent to him to take two every second hour.

Jan. 19.—The bowels have been very much acted upon all last night, and during the day. Motions very liquid and dark coloured. The secretion of the urinary organs perfectly re-established. He is much relieved: eyes and countenance more expressive.

Jan. 20.—Bowels still acting, and he is passing urine copiously. Tonic and aperient medicines were prescribed.

Jan. 30.—Resumed his usual avocations.

CASE FOURTH.

Case of malignant Cholera treated successfully by the use of the Tobacco enema.

I was requested to visit George Liddle, ætat. 39, living in a courtyard in Percy Street. I saw him at three o'clock on Sunday afternoon, the 22d Jan., 1832. He was seized with vomiting and purging on the evening of the 19th, which continued up to the time I visited him. Some remedies were tried, but without any good effect. His present appearance is that of a person of sixty years of age. The present symptoms are pain of head, and double vision. Countenance much sunk. Eyes languid, and conjunctiva slightly red. Lips pale, and tongue white. Voice changed, but not quite reduced to a whisper. Abdomen hollow, muscles tense as a board. Acute pain in the epigastric region. Skin of hands and fingers corrugated. Nails very blue. Pulse 80, very weak and irregular. Skin dry, vomiting and purging of white flocculent fluid. Retention of urine. Intense thirst. No cramps at present in the muscles of the extremities. An emetic was administered, and afterwards a mixture with ammonia. Nine o'clock, P. M.—Vomited freely, after taking the emetic. Took eight ounces of blood. It was very black. Pain of epigastric region greatly relieved after bleeding, but returned soon after. Inject an enema, with laudanum three drachms, hot water one pound, and take compound powder of ipecacuan eight grains, camphor two grains, every second hour.

Jan. 23, 10 o'clock. A. M.—I employed the remedies of yesterday, because so much had been said against the use of tobacco, and in praise of other means; but this morning I found the patient getting so very rapidly worse that no further time was to be lost. His voice is reduced to a whisper. Pulse very feeble and intermittent. Expression of anguish in countenance, and he makes constant inquiries as to his recovery. Jactitation, dry skin, and extreme coldness. Frequent vomiting, and purging of pellucid fluid, mixed with floeculi. Constant desire for cold water. Has not passed urine. One o'clock, P. M.—An infusion containing half a drachm of tobacco was now administered. It was retained about ten minutes, but he could not be prevailed upon to keep it longer. A dose of pills was swallowed containing two grains calomel, and ten grains of compound rhubarb mass. Half-past 1 o'clock. The pills repeated, and a draught administered consisting of Epsom salts, rhubarb, carbonate of ammonia, and soda, each ten grains, water an ounce and a half. He has vomited once, but passed no evacuation per anum. Pulse improved, soft, and more regular, tension of abdominal muscles subdued. There was an evident improvement in the colour of

the skin and lips, as well as in the expression of the eyes after the exhibition of the enema, and he said he saw better. Blueness of the nails has also much gone. Blood coagulated, contains a very small quantity of yellow coloured serum. Six o'clock, P. M.—He has not vomited, and has been purged only once, appearance of skin and countenance improved. Pulse 84, and firm. Sight better. Blue colour of nails quite gone. Repeat the draught and pills of rhubarb and calomel. Seven o'clock, P. M.—He has slept a good deal, and the man who is with him says he is sure he is better, because he lays quiet, and does not toss his arms about as he did. Has had another motion, tongue evidently changed. Take an ounce of saline julap, two ounces wine every second hour, besides a powder of calomel, antimonial powder, nitre, each five grains. Eleven o'clock, P. M.—Pulse 80, with some intermission. Abdominal muscles flaccid. Hiccoughs. No vomiting or alvine evacuations. Has not passed urine. Very drowsy. Complexion better.

Jan. 24.—Pulse 80. Voice stronger. Skin has become very red. Has passed an evacuation of a bilious tinge, but still containing flocculi. Has taken a pint of the mixture, and four powders. The draught with Magnesia, &c., was given early this morning. Vomited some bilious fluid. Twelve o'clock.—Complains of tenesmus. To have a common enema. Take an ounce of a mixture of compound infusion of gentian, twelve ounces Epsom salts, one ounce tincture of myrrh, half an ounce every fourth hour. Two o'clock.—Has passed another evacuation entirely bilious.

Jan. 25.—Passed another bilious motion last night. Pulse not quite so good. Has slept quietly all night. Gummy exudations from eyelids. Tongue white. To be allowed ale, broth, &c., &c. Evening.—Has taken some coffee. Strength improving. Bowels have been moved, and he has passed urine.

Jan. 30.—He has been gaining strength since last report. Has a good appetite and may be considered quite well.

CASE FIFTH.

Case of malignant Cholera treated in the Cholera Hospital at Gateshead, wherein the Tobacco enema was administered successfully.

James M'Innes, ætat. 35, was taken into the Gateshead Hospital, on the night of the 14th January, 1832, exhibiting all the usual symptoms of a well marked case of Cholera. A very careful report of the case was kept at the Hospital, but too long to be detailed here. He was bled after admission. Nine ounces withdrawn, described to have been dark coloured and thick. An emetic was administered, which produced free vomiting, during which the pulse improved in strength, but soon fell to the feeble state it was in when admitted. A bolus containing 1 grain of opium, and 5 grains calomel, was swallowed.

Jan. 15.—One o'clock, A. M.—He is described to be worse, and took a draught composed of 10 grs. of Cayenne pepper, and 6 drs. of brandy. Soon afterwards vomiting and cramps returned. The bolus repeated, and he was directed to take saline julap very frequently. In the morning, at 6 o'clock, he is described as much worse. Vomiting and purging severely. Pulse scarcely to be felt at the wrist, and he was very cold. Warmth was freely applied, and he was ordered to drink liberally from a mixture of nitric acid and water, 1 dr. to the lb. Two grs. of sulphate of quinine were also given in the saline julap every two hours. Twelve o'clock.—He is reported to have taken three doses of calomel, each containing 10 grs., since 9 o'clock. The quinine was rejected. His present symptoms are great pain across the præcordia. Vomiting constant and severe. Cramps of the muscles of the trunk have come on. Pulse barely perceptible, and irregular. Twelve leeches applied. A tobacco enema, recommended by Mr. Baird, who saw the patient about one o'clock, was administered at three o'clock. Seven o'clock, P. M.—He has been taking an ammonia mixture at intervals. Vomiting has ceased. Cramps have disappeared, except slightly in the fingers. Pain about the præcordia less severe. Pulse 80, and more regular. Face flushed. Surface warmer, and a free moisture is appearing over the trunk and extremities. The man is looking better, and says he feels quite easy. A dose of calomel administered. Nine o'clock, P. M.—Passed about half a pint of

thin fluid. He is sleeping calmly. Has vomited only once since last report. Skin natural in temperature over the trunk. Hands and arms cooler.

Jan. 16.—The patient has passed a good night. Has taken three powders, with eleven grains calomel, and one scruple rhubarb, but vomited each of them. Nine o'clock, A. M.—Pulse 80, and feeble. Drowsy. Has not passed urine. The vessels of the conjunctiva firmly injected, and there is some approach to muttering during sleep. An evaporating Lotion to be applied to the head. A warm injection administered. One o'clock, P. M.—The patient states that he passed a little urine with the enema. Pulse 80. To take effervescing mixture with brandy. Four o'clock, P. M.—Pulse 90, and firm. Mouth and tongue moist, and he passed urine. Eight o'clock, P. M.—Sleeping on his side, breathing softly. Pulse 84. Has passed an evacuation, and some urine. Stool feculent.

Jan. 17.—Eight o'clock, A. M.—Much improved, and has taken coffee and toast for breakfast. Has had one alvine evacuation early this morning, and has passed urine. Pulse 92. To omit medicines, and to take coffee or gruel when he wishes. Eight o'clock, P. M.—Has been improving every visit. He took broth and rice pudding for dinner. Pulse 96, and regular. Skin natural, and tongue clean. No pain. Eight o'clock, P. M.—Pulse 88, and soft. Complains of slight uneasiness in the bowels. No evacuation.

Jan. 18.—He has passed several dark bilious stools and abundance of urine. Appetite for food returned, and he only complains of debility. Left the Hospital quite well.

CASE SIXTH.

Thomas Horn, ætat, 47, had been labouring under diarrhœa for two or three days, and the night before I saw him had drunk rather freely of ale, which brought on vomiting. I was called to him on Sunday evening, between ten and eleven o'clock, Jan. 29th, 1832. Two medical friends accompanied me. We find him in the following situation:—Countenance dejected. Pulse very feeble, particularly in the left arm. Tongue white and cold, as well as the breath. Vomiting and purging of the usual kind of fluid. Cramps of the extremities. Dark areola round the eyes, which are sunk in the sockets. Lips purple. Complexion livid. Hands and fingers sodden. Skin cold. Urine suspended. The tobacco enema was exhibited cold at eleven o'clock, and retained with some difficulty. This was done in consequence of some people who were foolish enough to say that it was the warmth of the injection of tobacco that produced the good effects. In a short time, I observed to my friends that the colour of the lips had changed to a more florid hue. The change in the pulse was not so decided, but at the left wrist it was evidently improved.

Jan. 30, 10 o'clock, A. M.—He has occasionally vomited some dark fluid through the night. Has passed some dark fluid from the bowels. Has had no more cramps. Pulse frequent and rather feeble. Complexion still better. Has perspired freely. Tongue warm and white. Has not passed urine. Voice hoarse. Expresses himself much better. He has slept well and has passed urine freely. This is, however, the first day that the desire for food has been observed. He is now taking some medicine, and expresses himself quite well.

I beg to subjoin the following two Greenock cases—the only ones in which I have had an opportunity of giving the remedy a trial. In two cases, I believe, it has been used in the Hospital; but the patients were in articulo, and the tobacco was resorted to after all other practice had failed.

Mrs. M'Millan, ætatis 56.—At 12 o'clock last night, called at her house, a very cold place, wherein there was only one bed for the accommodation of the whole family. I found her in a complete state of collapse. She was in much agony with dreadful spasms of the lower extremities and arms, with vomiting and purging. Has had mild diarrhœa during the preceding days, but was not seized with severe symptoms until nine o'clock last night. Her son died of Cholera upon Tuesday last. No pulsation to be felt at the carotids. Was admitted into the Hospital at half-past ten o'clock this morning, and was placed in the

stove-room in a temperature of 78. Applied frictions for about an hour, but could not persuade her to take any medicine. Let her have immediately an enema of the infusion of tobacco one dr. Two o'clock.—In ten minutes after the injection her pulse became perceptible, but beat exceedingly feeble, 98 in a minute. Cramps have disappeared. Half-past two o'clock.—Pulse became stronger. Temperature in the arm-pit, 86. Pupil active. Countenance beginning to become flushed. Three o'clock. Pulse full, soft, and more comfortable. A quarter before four o'clock.—Skin cold. Pulse 120, soft, but full. Still refuses medicine. A quarter past four o'clock.—Pulse 108. Adnatæ more injected. Thermometer in the arm-pit 86. Temperature of the room 70. A quarter past four o'clock.—Face flushed. Skin rather warm, and covered with clammy sweat. Was put into a long comfortable gown. To have a draught every hour, composed of the juice of one lemon, to a drachm of the super-carb. of soda and two ounces of water. Let her have two grains calomel every hour. Six o'clock.—Temperature of the body 86. Seven o'clock.—Pulse much more feeble and very irregular. Half-past seven o'clock.—Pulse disappeared, even at the neck. Gave an enema of hot water three lbs., and brandy six ounces. Intermit the calomel. Half past seven o'clock.—It is now evident that she is sinking. Her countenance is very dark, and of a cadaverous hue. The mouth, however, is warm, and the general temperature is comfortable. At 8 o'clock A. M., breathed her last.

March 11, 1832.—Mrs. M'Gregor, Drummer's Close, became affected three days ago with severe vomiting and purging. During the last twenty-four hours the purging has taken off, but the vomiting has been constant and distressing. Pulse imperceptible at the wrist—perceptible at carotid. Dejections like rice-water. Skin very cold. Give her a domestic enema, with two ounces of common salt. R. calomel two grains—give one every half hour. Six o'clock, P. M.—Pulse still imperceptible. Inject a drachm and a half immediately of the infusion of tobacco.—Twenty minutes past six. Pulse 116, soft, and distinctly perceptible.—Seven o'clock. Pulse 112, soft. Vomited three times.—Half past seven. No vomiting or stool. Pulse 116. Feet and hands warm.—Eight o'clock. Pulse 112, soft and full. Extremities warm. No vomiting or purging.—Half past eight. Same as last report.—Nine o'clock. Pulse 118. Symptoms the same.—Two o'clock morning. Pulse 92, soft and comfortable. Two bilious stools. This woman had severe consecutive fever, but has since done well.

NOTE C.—FIRST CASE.

Case of cure just approaching to collapse managed by very moderate bleeding and the use of calomel.

Robert Adams, residing in Pudding Chase, Newcastle, ætatis 48, admitted January 2d, at half past nine o'clock, P. M. Has had diarrhœa for three days, but he went about as usual till this afternoon. Has had sickness, and been violently purged all day. He began to vomit at two, P. M.; between which and the time of his admission he vomited only twice. About four o'clock he was seized with severe cramps of the legs, which made him shout out loudly. Says he is of temperate habits. His occupation is gathering bones, &c. On admission his feet and hands were cold, he complained of sickness, he had cramp in the legs at intervals—pulse 108 in the minute of some volume, compressible. Warmth was applied by means of heated sand, &c. He was ordered to be bled to six ounces; a vomit of common salt was given; it caused vomiting while the vein was open. The pulse seemed unaltered by the bleeding. Calomel two grains, opium one-sixth of a grain; conserve as much as makes a pill, to be taken every hour. Let a large warm gruel enema be given immediately.

Jan. 3.—The cramp left him soon after he was bled—he got into a comfortable warmth. Had a good night; has vomited about six times; frequent watery stools. Had some gruel during the night; coffee for breakfast—complains of no pain anywhere. Skin warm, pulse 96; tongue dry, brown in the middle; has made no urine; has a desire to purging and occasional vomiting. Continue the pills and apply the following liniment to the belly:—Strongest ascetic acid one

ounce, cantharides ten grains. Previously steeped for three days. Diet, sago with spices. Every fourth hour throw up a warm gruel enema.

Jan. 4, 11 o'clock, A. M.—Slept four hours during the night. No vomiting. Four dark liquid stools. Complains of thirst and pain. Where the liniment was applied, there is slight redness of the part. Pulse 96, of good strength. Skin warm. Tongue white, rather dry. Says he has a bad taste in his mouth. No other sign of ptyalism observable. Made a few drops of urine while at stool. Continue the pills of Calomel without opium. Inject immediately an enema of the decoction of oak bark, and repeat it every second hour. At 6 P. M. discontinue the pills and enema. Take powder of rhubarb six ounces, powder of ginger three grains. Mix and take at bed-time.

Jan. 5, 10 o'clock.—Slept five hours during the night. No stools. Urine pale, one quart and half a pint since last night. Tongue furred. Dryish, bad taste in the mouth. Gums tender. Pulse 100. Has some pain before the urine flows. There is some pain, on pressure, in the hypogastrium. Carbonate of magnesia six grains, powder of ginger three grains; take immediately. To have half an ounce of castor oil, and again in two hours. Seven P. M.—Has had no stool. Inject immediately a common enema, with an ounce of castor oil. The injection was soon discharged; it contained mucous and some green chopped stuff.

Jan. 6, 11 o'clock.—Was a little sick in the night time; vomited about two ounces of clear yellowish fluid. Slept soundly. No stools. Urine copious. Tongue moist, becoming clean. Pulse 96. Skin warm. Powder of rhubarb twelve grains, of ginger four grains, take immediately.

Jan. 7.—Has had several feculent dejections. He slept well during the night. Has no pain anywhere. Continues in other respects much as yesterday. To have a draught every second hour, of one drachm spirits of nitre, twenty drops compound spirit of ammonia, five grains powder of rhubarb, and an ounce and a half water. Make six draughts. R. Extract of colocynth compound six grains, mercurial pills four grains. Mix and take at bed-time, and the draughts every two hours.

Jan. 8.—Has had a good night. Copious feculent dejections. Makes plenty of urine. Appetite good. Repeat the mercurial pill as formerly.

Jan. 9.—Continues to improve. Bowels open. Pulse 90. Mouth still tender. To have an opium pill at bed-time. To sit up an hour to-day.—Dismissed cured, Jan. 18.

SECOND CASE.

Catharine Hall, ætatis 22, resided in Pudding Chase. Habits temperate. Admitted January 6th, 7 o'clock, P. M.—For two days previous to this the state of the bowels was loose. This evening 4 o'clock, was seized with giddiness and loss of sight, after which with violent purging and retching, with cramp of the abdominal muscles. Says that one arm and the calves of both legs were slightly affected with the same spasms. The matter dejected was like water. On admission, she complained of violent pain of the belly. The abdominal muscles were spasmodically contracted. Very rigid pain, increased by pressure. It seems entirely muscular. There is no deficiency in the temperature of the body. Pulse 92, strong intermitting. She was bled to eighteen ounces, and vomiting was produced by a solution of common salt. The blood was florid. It flowed freely. R. Calomel two grains, opium one-sixth of a grain; conserve enough to make a pill. To be taken every hour till eight are taken. Inject a large common warm enema.

Jan. 7, 11 o'clock.—Has slept none during the night. No stools. No urine. Pain of abdomen decreased. There is, however, still a little pain. The rigidity of the abdominal muscles is gone. Complains of thirst. Tongue white, moist. Pulse 92, of good strength. R. Three drachms spirits of nitre, a drachm and a half spirit of ammonia, a drachm carbonate of magnesia, camphorated mixture two ounces. Take one ounce every second hour. Apply the cantharides solution to the pit of the stomach. Diet sago. R. Extract of colocynth six grains, mercurial pills four grains. Make a mass to be divided into four, and taken at bed-time.

Jan. 8, 10 o'clock, P. M.—Has not slept more than an hour all night. Skin rather hot. Pulse 100. Tongue white, moist. Mouth seems slightly affected

by the calomel. Has made urine copiously since yesterday forenoon. No stools. The solution of cantharides has produced vesication. R. Tincture of opium thirty drops, spirits of nitre one drachm, water one ounce. Take immediately.

Jan. 9.—Made urine plentifully during yesterday, when she had several feculent stools. Since 10 o'clock last night has had no evacuation of any kind. Passed a sleepless night, although she took the draught at bed-time. Complains of considerable head-ache, also of slight pains in the hypogastrium. The urine was ordered to be drawn off by the catheter. There was but half a pint of brownish urine in the bladder. Says she is better to-day. Has no appetite for any thing. Pulse 80, of moderate strength. Tongue white, moist. Gums tender. Breath mercurial.

Jan. 10, 10 o'clock, A. M.—Has had a pretty good night. Two or three loose feculent stools. Has made no urine. Pulse still quick. Says she is greatly better. Urine drawn off by the catheter. To have immediately:—rhubarb one scruple, julap ten grains, ginger ten grains.

Jan. 12.—Continues to improve. Can now make urine freely. To sit up a little to-day.

Jan. 13.—Had a restless night. Was kept awake by pains of breast and cough.

THIRD CASE.

Case managed by moderate doses of Calomel and Opium, and by occasional doses of Brandy and Injections. Not formidable at first, but ending fatally.

Elizabeth Fletcher, ætatis 28. Admitted January 10, 12 o'clock, noon.—Resided in Queen's street. Mode of life irregular, intemperate. Is a girl of the town. States that her bowels have been loose for several days. Yesterday felt rather sick. Took some glasses of spirits, which she is in the habit of doing. Towards the evening the sickness greatly increased. At eight o'clock she commenced vomiting and purging most violently, at the same time severe cramps of the hands and legs came on. She continued in this state all night. 12 o'clock. Has passed her stools in bed. They are watery, and come away involuntarily. Has made no urine since the disease commenced last night. Has taken nothing but cold water—no medicines of any kind. On admission, features were shrunk and blue, as were the hands. Extremities cold. Pulse scarcely perceptible. Voice rather hollow, (not whispering.) Mouth and breath very cold. Tongue white, moist. Breathing frequent. (Was bled last night to ten ounces. Had three grains opium at eleven o'clock.) Complains much of thirst—says her mouth is burning—it feels quite cold. Legs cold as water. Heat was applied by means of hot bags and vessels containing hot water. Inject immediately an enema of two drachms laudanum and hot water. R. calomel four grains, powder of ipecacuan two grains, opium half a grain: make six pills—one every hour. To have an ounce of brandy every hour, in warm water. Since the warmth was applied to the legs, she has had no return of cramp. Legs to be rubbed with warm flannel. Two o'clock. Has passed the injection in bed. The sphincter ani is much relaxed. Three o'clock.—Pulse distinct, but very feeble, quick. Heat of the mouth 82. Another starch injection, with one drachm laudanum was given. Continues to call for cold water—none given. Six o'clock.—Continues as before—still entreats for cold water. To have a soda powder frequently. Ten o'clock—Has become very restless. Tosses about in bed. Will not keep the hands under the clothes. No pulse at the wrist, by the carotid 140 in a minute. The hands very cold from being exposed—otherwise as before. Neither cramp, vomiting, nor purging.

Jan. 11.—She became more restless, and expired at three o'clock this morning. She was sensible till one o'clock, from then she was delirious. Sat up in bed and called for water ten minutes before death. The last ten minutes she lay quietly.

FOURTH CASE.

Case of severe premonitory symptoms treated by large doses of Calomel, &c., terminating favourably.

John Proud, labourer, ætatis 30, residing in the Mill Entry, admitted Jan. 13th, half-past twelve o'clock, P. M.—He states, habits temperate. Is much exposed

to the weather. Of late, has been employed in emptying out ashes, &c. Bowels have been loose some days past. Was seized last night, nine o'clock, by violent vomiting and purging. Dejections watery; an hour after which, violent cramps came on, from the feet to the top of the thigh. These continued till admission here. Has had no medicine of any kind. Got a little brandy at ten o'clock this morning. On admission, countenance much shrunk. Bluish extremities, rather cold. Heat of the rest of the body pretty good. Pulse 100 in a minute, weak. Tongue covered with a thick white coat, moist, not cold. He complains of pain on pressure of abdomen, and of the cramp, which is most severe in the legs and thighs. Calls incessantly for cold water. The thirst seems most excruciating. Says he made urine this morning. R. Calomel a scruple, take immediately, and repeat every hour. Inject an enema with sulphuric æther two drachms, laudanum one drachm, and mucilage four ounces. Heat was applied by hot sand, and vessels containing hot water. The legs to be well rubbed during the time of the cramp, which is very severe and recurs every half hour. Is allowed a table-spoonful of cold water occasionally. Ten o'clock.—The injection was retained till five o'clock. Cramp still continues severely, though less frequent. Thirst extreme. Has just now passed about two ounces of feculent dejection, tinged with blood. Otherwise as before. Give a large injection of hot water.

Jan. 14, 10 o'clock.—Has had no return of cramp since twelve o'clock last night. Retained the injection till twelve; since then has had several stools of brownish fluid, containing a tinge of blood and some feculent matter. No vomiting. Slept quietly between each stool—in all, four hours. Does not complain so much of thirst since the injection operated, but is still a little thirsty. Complains a little of pain in the hypogastrium. Pulse 90, improved in strength. Tongue white. Skin warm. Inclines to sleep. Has made a few drops of urine when at stool. Says he could eat. Diet sago.

Jan. 15.—Continues to improve. Sleeps much. Has had too loose feculent dejections. Has made a small quantity of urine. Skin rather hot. Tongue moist, white. Pulse 90. Says there is a bad taste in his mouth. No other symptom [of] ptyalism. Had boiled milk with bread to breakfast. To have beef tea for dinner, with toast. To have an ounce castor oil.

Jan. 16.—Has had a good night. Several green stools. Makes plenty urine. Has no complaint. Eat his hasty pudding this morning with an appetite.

Jan. 17.—Had a good night. Still passes dark green stools. Makes plenty urine. Mouth affected by the mercury slightly. Otherwise as before.

Jan. 18.—Has had a good night. Has no complaint. Continues to improve. No stool.

Jan. 19.—Had a good night. One natural stool. Makes plenty urine. No pain, except of mouth, which is pretty sore. Pulse 76. Natural strength. Appetite good.

Jan. 21.—Appetite good. Bowels regular. Mouth rather sore. Otherwise he is well.

Jan. 24.—Dismissed cured.

FIFTH CASE.

Severe premonitory case cured by Calomel and Opium.

Ann James, ætatis 26, residing in the Mill Entry, admitted Jan. 13, at one o'clock P. M.; says habits temperate. Has been for three days past in constant attendance on a man, in whose house she resides, labouring under cholera—during which she has had no sleep.—Last night, eight o'clock, became cold, shivering, and sick, violent purging commenced. At ten an attempt was made to take blood from the arm: some could be obtained. It caused fainting, on recovering from which, purging, and violent cramp of the legs, came on. Has made urine several times during the day. Last night some pills were given her. Has drank much cold water. Since last night the stools have come away involuntary. On admission, blueness round the mouth. Feet and hands rather cold—no perceptible alteration of their colour. Pulse of moderate strength, 69 in a minute. Complains of thirst and of the cramp in the legs, which is severe

Vomited apparently water, had one rice-water stool. Heat was applied to the extremities. Sulphuric æther two drachms, laudanum one drachm. To have an effervescent draught of lemon juice and carbonate of soda every hour. Ten o'clock. Cramp continues, though less severe. Has had several stools, like the first. Has vomited twice. Pulse as before. Ten drops of laudanum to be added to each draught.

Jan. 14, 10 o'clock.—Says she had four or five good sleeps during the night; in the course of which the cramp of the legs recurred six or seven times. At intervals of about half an hour, has had four watery dejections like the former. No vomiting. Has had no cramp since half-past seven o'clock; no pain any where; has made urine when at stool. Pulse 96, soft, of moderate strength—skin warm; tongue white, moist; still complains of thirst,—has a great inclination to sleep. Continue the effervescent draught.

Jan. 15.—Has had a good night; has had several dejections, which are now tinged with fæces, of which they smell. Makes a little urine when at stool. Pulse 66, full—is otherwise as before. To have beef tea to dinner.

Jan. 16.—Has vomited several times during the night—had several loose brown dejections. Otherwise as before. To have calomel two grains, opium one grain, in a bolus. Take at bed-time two ounces infusion of senna, and two ounces of spirits of nitre mixed.

Jan. 17.—Has had a very restless night, with frequent vomiting. Two loose brown stools. Had some coffee to breakfast. Has not vomited since. Complains of pain no where. Has a great tendency to sleep. There seems some oppression about the head. Tongue brown, not dry. Pulse 84, full. Take three ounces infusion of senna immediately. Head to be shaved and kept cool. Low diet (sago). Eight o'clock.—Has had one stool, a brown fluid; otherwise as before. R. Calomel three grains, opium one-fourth of a grain. Take every second hour. Inject a purgative enema. R. Carbonate of magnesia two drachms, Peppermint water eight ounces. Take an ounce every second hour. Apply a blister to the whole head.

Jan. 18.—Slept at intervals during the night. The injection was soon discharged, tinged with blood. No stool since. No urine since last night. Blister rose partially. Has no pain of head, except from the blister. Feels a little pain in the abdomen on pressure. Pulse 76, full. Tongue brown, rather dry. There is still considerable heaviness, and tendency to sleep. Continue the magnesia mixture.

Jan. 19.—Slept pretty well during the night. Vomiting continues. One loose brown stool. Plenty of urine. Tongue brown, dry. Complains of thirst, and slight tenderness on pressure in the epigastrium. Pulse 90, full. To have beef tea. In the evening apply the blister to the epigastrium, then inject a cathartic enema every fourth hour.

Jan. 20.—Much dark green matter was discharged along with the injections. The blister rose partially. Complains of no pain any where. Otherwise, continues much as before.

Jan. 21.—Appears much as before. Has had several loose brown stools. Makes plenty urine. Tongue more moist. Pulse 78, full. To have four ounces red wine. No particular symptoms presented themselves, but slight consecutive fever.

Dismissed cured February first.

SIXTH CASE.

Case approaching to collapse cured—excellently treated by Mr. M'Alum.

Joseph Hawkins, ætatis 28, admitted Dec. 27th, five P. M.—Is a labourer residing in Prudhoe Street. His usual habits are temperate. Some days ago had diarrhœa, which stopped suddenly some two days since. This morning, at seven A. M., was seized with sudden sickness, and vomited freely; then succeeded profuse purging: still he was enabled to walk about. Went down to the Dispensary for something to stop his looseness, when he was urged to apply to the Hospital. During the afternoon, some cramps in the legs and feet distressed him.

much. On admission, the appearance of the face and hands presented nothing remarkable. The feet were very cold. Pulse 108, of moderate strength. His voice appeared hoarse, with whispering sound. Has passed no urine to-day. To have calomel five grains, opium half a grain, aromatic confection three grains—to be repeated every hour. Inject an enema of three pounds of hot water and two drachms of laudanum. He expressed relief from the injection, and a degree of comfortable warmth ensued. Pulse now 96, moderately full. Seven, P. M.—Enema repeated with three drachms laudanum. The cramps were severe, and the skin becoming much colder. Since former visit he has passed a stool containing flocculi. After the administration of the enema, the hot air bath was applied, which was continued for one hour and a half, removing the spirit lamp, whenever the patient complained of the heat, and applying a wet cloth to the extremity of the copper tube, to prevent the ingress of cold air, re-applying alternately the spirit lamp as the heat diminished. R. Calomel five grains, compound powder of ipecacuan, ten grains camphor, three grains aromatic confection, to make four boluses—one to be taken every two hours with two table-spoonfuls of the following mixture:—R. Compound spirit of ammonia three drachms, spirit of nitre half an ounce, vinegar three ounces, peppermint water three ounces. Half-past ten P. M.—The skin is now moist. Pulse 108, soft. He has become sleepy. No sickness, cramp, or pain of any kind.

Dec. 28, 11 A. M.—He retained the last injection until 3 A. M., since which time has passed one flocculent whitish stool. Vomited several times during the night, immediately after taking the medicines, but slept quietly at intervals. Has passed no urine—thinks he has passed none for 36 hours. Has no pain. Skin warm. Pulse 96, moderately full. R. Calomel three grains, make six. R. Ascetite of ammonia three drachms, sweet spirits of nitre two drachms, water three ounces: take two table-spoonfuls every hour, with one powder. Repeat the injection. Diet sago, with milk. 10 P. M.—Enema soon expelled unchanged. He vomited a brownish fluid twice during to-day, and slept occasionally. Took the sago readily. Has passed about two ounces of urine of a dark brown colour, having a strong ammoniacal odour. Skin warm. Tongue moist. Pulse 92, full. Give an injection of two lbs. hot water, and one ounce castor oil. Give eight grains calomel every second hour, with two table-spoonfuls of the following mixture:—R. Epsom salts one ounce, carbonate of magnesia one ounce, carbonate of soda two drachms, water ten ounces.

Dec. 29, 10 A. M.—Has had a restless night. Vomited and purged freely. The matter ejected was a greenish fluid. The dejections also were of a deep green colour, evidently bilious. Has passed water while at stool. Pulse 84. Tongue moist, and clean. Complains of occasional pain in the lower part of chest, right side, which is increased by full inspiration and vomiting, but not permanent. Omit the powder and mixture, and give two ounces castor oil immediately. If the vomiting continue apply a sinapism to the epigastrium. Weak mutton broth and toasted bread for dinner. Ten P. M.—Vomiting still continues. Has had two stools, dark green. Has passed a good deal of urine to-day. R. Carbonate of magnesia one drachm, bi-carbonate of soda three drachms, water eight ounces, mix. R. Tartaric acid two drachms, water eight ounces. Mix. Half a wine glassful of each every hour.

Dec. 30, 10 A. M.—Vomiting still continuing, and pain on pressing epigastrium. Ordered eighteen leeches to be applied. Diet sago.—Eight, P. M. Leeches have bled freely, but still a degree of pain on pressure. Has had one bilious stool. Apply a blister to the stomach. R. Calomel six grains, opium a grain and half; conserve as much as to make two boluses, a bolus to be taken immediately. R. Carbonate of magnesia one scruple, powder of rhubarb half a drachm, water one ounce. Mix. Take in the morning.

Dec. 31, 11 A. M.—Blister has risen well. Vomiting abated. Pulse 64, full. Complains of lightness in his head. Dark green stools continue. Apply eight leeches to the temples.—Eight P. M.—Head better, and in every respect better this evening. Repeat bolus and draught.

Jan. 9.—Continued making daily improvement. Dismissed cured.

SEVENTH CASE.

To Dr. Kirk, 47, Blackett Street, Newcastle-on-Tyne.

2, Eldon Square, Feb. 2, 1832.

Dear Sir,—I beg to forward you the following particulars of a case of cholera, in which the treatment I have generally pursued is detailed. Stephen Wilkinson, ætat. 54, had been suffering for a week from a constant diarrhœa, and had applied to a medical gentleman in the neighbourhood, who used the remedies usually applied in the diarrhœas of this country. On the 28th of Dec., however, he was seized with violent vomiting and cramps of the extremities; and my assistant was called in to see him. He ordered him some astringent medicines, and went home. I was requested on the 29th, the following day, to visit him, and found him at 11 A. M., in the following pitiable situation:—He was deadly cold throughout the whole surface, which was also of a dirty brown, blackish, or livid appearance; a dark areola around the eye, which was much sunk; the whole countenance haggard and hideous. His extremities cramped, and fingers corrugated. A cold clammy perspiration over his forehead and limbs. No pulse to be felt in either radial or brachial artery, but distinctly in the carotid, although that in the heart was not perceptible. I will make a remark on this subject after I have detailed the case. His tongue was covered with a thick slimy mucus of the colour of cream, and of that consistence. His breath communicated the same sensation to the hand, that is felt if it is applied to a key hole, a chilly coldness. The first thing I did was to remove from the man's body his cold damp shirt, to replace it by a pitman's jacket, which is made of very thick woollen stuff—to remove the sheets, which were also damp with perspiration, and permitted him to lie between the blankets. I then gave him a mustard emetic, consisting of a table-spoonful of mustard, mixed in half a pint of water. He had previously vomited two or three times, and had purged. The appearance of these fluids were similar. The emetic brought on a full vomiting, and after that we experienced no further trouble on this score; the answer given to my question was that he now felt his stomach very warm: it had before been cold. This was done in a whisper. I placed the hand on the radial artery, and thought I felt some thing like returning pulse; however, I might have been mistaken. I commenced at 12 o'clock to give him two grains of calomel, a quarter of a grain of opium and six grains of ginger, doses which had been previously prepared, and repeated every half hour, with a table-spoonful of a mixture composed of one pound spirits of ammonia, spirits of camphor, and water, the dose being about half a drachm of the former and twenty minims of the latter. Hot bricks were applied all around him and to his feet. The palms of the hands were wrapped up in heated flannel cloths, and repeatedly changed. His extremities were often rubbed dry with hot linen cloths; and these means, with a large mustard cataplasm to his abdomen, were steadily persevered in until two P. M., when I had the satisfaction of feeling the tongue to be warmer, the breath warmer, and a small quick vaseillating pulse at the wrist. At 3 P. M., the pulse was again gone. Another mustard emetic was had recourse to, and the same applications and frictions continued; and at six P. M., for I never quitted the room during the whole of this period, I had the satisfaction in beholding the stage of reaction completely formed; and before quitting him he discharged a dark feculent motion. He then felt drowsy; I ordered the bricks to be replaced by hot ones, and that he should be kept quiet, and if he fell asleep not to disturb him until 10, when the following bolus was to be given, followed up by the draught in the morning. Powder of camphor five grains, calomel four grains, mercurial pill mass three grains, Dover's powders six grains. Mix and make a bolus to be taken immediately. Two ounces of castor oil, and half a drachm of carbonate of soda, two drachms tincture of senna, a drachm of tincture of cardamoms made into a draught. This was attended with benefit, and he continued to improve daily afterwards. Some effervescing medicines were prescribed, but they seemed to disagree with him, and were discontinued. He walked before his doors four or five days after this, got a sudden chill, and fever was the result, attended with such violent cerebral affection, that he became delirious and gradually sunk. Leeches, blistering, and bleeding, with purgation,

were adopted at the onset of this subsequent attack ; bark and other stimulants at its close. It is singular in this disorder, that, during its attack, the head is the only part in which there does not appear to be any congestion. In the stage of reaction it is the part most to be attended to. This has been the plan of treatment I have always adopted in the blue cholera ; but I regret to say it has not been attended invariably with the success it was in this man's case. I remained with him from 11 to 6 P.M., and saw my plan of treatment carried fully into effect. I have never been able to devote any thing like that time to any other patient. Another fact is that I had two devoted nurses to assist me ; they continued unremittingly to use the hot applications. They were the children of this man, his son and daughter. The remark I intended, with regard to the pulsation of the carotid artery, is this :—In several instances I have not been able to feel but a fluttering sensation at the heart, when the carotid has been felt distinctly and regularly pulsating. Can this account for the correctness of the mental powers during the whole of this disease ?—I am, dear Sir, yours truly,

W. MORSON, M. D.

N. B.—I may add, that this man never discharged one drop of urine during the whole time I had seen him, or for 24 hours previous, and that at night after the bilious motion. This fluid began to be secreted in small quantities, which gradually increased. Dr. White mentioned to me a day or two ago, that he generally had the body washed over when the patient was brought into the hospital. This need scarcely to be done, for by using friction with dry linen cloths, you can always take off all the dirt on the surface, the perspiration being so copious ; and the exposure of the patient would not be so great.

W. M.

NOTE D.

The cautery I use is a tube of poreelain, of a foot long, and an inch and half diameter. It is inclosed in a copper tube, to which it is luted at the upper and under ends. A rod of an inch and quarter diameter is made, of the length of this tube, and one half inch longer exactly. The rod has a little wooden handle at top. It is made red hot, and introduced into the tube in another room, and delivered to the Surgeon in that state, who, by pushing it down its extreme length, and applying it to the skin, can apply the actual cautery, without the patient knowing that a red hot iron has been used.

NOTE E.

Enemata are universally recommended by all practieal men who have largely treated the disease. In the premonitory stage they should be large, emollient, and lukewarm. If the last dejections from the bowels have been still feculent, salt should be added to the first, and perhaps the second injection. In the collapse, the rule should be to make them as warm as the finger will bear, without scorching, and at least three pounds in quantity. By keeping the fingers on the anus for five minutes, the sphincter would generally resume its tone, and the injection will be retained for hours together :—but, should an occasional case of relaxed sphincter occur, the plan of Dr. Clanny of Sunderland will answer excellently, simply plugging the rectum with a thick greased wax candle. Mr. M'Intyre of Newcastle used the muriate of morphia extensively in his injections, I have no doubt, with very great success ; and it will be seen, from my account of Mr. John Fyfe's practice how extensively he uses gently stimulating injections. Indeed, this is the general practice of the respectable practitioners of England. I need not say one word in disapprobation of the more stimulating injections of spirits of turpentine, camphor, &c. They only produce irritation, are soon discharged, and cannot be used on any sound principle.

NOTE F.—FIRST CASE.

Case cured by frequent small doses of Calomel.

Geo. Hill, ætatis 5, admitted Jan. 14, 1832. Taken ill this morning at one A. M., with purging and then vomiting. No cramps. Stools watery. Visited at 7 P. M., and found the patient cold. Livid areola round the eyes. Countenance expressive of anguish. Pulse at wrist feeble. Says he has not micturated since morning. Thirsty. Lies with his eyes partially covered with eyelids. Calomel two grains—give one every half hour. Spirit of ammonia five drops, half an ounce port wine, and half an ounce water.

Jan. 15.—Skin warmer, Eyes suffused—pupils contracted. Vomiting and purging nearly gone. Stools resembling curds and whey. Pulse stronger. Apply four leeches to the temples, and afterwards a blister. The affection of head relieved. The fever was slight, which yielded to purgatives and salines. An eruption on the arms. Second day of fever resembling scarlatina. Case eventually did well.

SECOND CASE.

Case of collapse cured by small and frequent doses of Calomel.

Ralph Broadbelt, ætatis 24, pitman, admitted January 21. Was returning from work at twelve, midnight, and was purged three or four times on the road. No griping. Says his stools were watery. Cramps and vomiting came on at seven next morning. Admitted same day at 9, A. M. On admission pulse at wrist is just perceptible. Face and hands exsanguineous. Rather livid about the nails and eyes. The lower part of the ear feels quite flaccid—can be drawn out to the extent of one and a half inches, which does not contract again. Has had one stool, about two ounces in quantity, like thin broth, without smell. Vomited two pounds of a fluid resembling coffee grounds. Expression of anxiety in countenance. Voice husky. Tongue cold and coated with a brownish white fur. Inject immediately a pound and a half of starch, laudanum half a drachm. R. Calomel five grains—make six powders. Take one every hour. Apply a mustard cataplasm to pit of stomach. Ten, A. M. Pulse rather more perceptible. Complains of mustard. Calls piteously for cold water. Cramps in left leg. Vomited matter clearer. Has been thrice purged. Let him have two ounces of wine every half hour, and two grains of calomel every hour. Eleven, A. M.—Skin reddened from mustard. Pulse, at intervals, perceptible—very irregular. Cramps, vomiting, and purging, continues. Continue the remedies. Half-past twelve.—Pulse at wrist same in power. There is a slight flush of excitement in checks. Restlessness great. Complains of the weight of tins. Continue the medicines. Has had no purging since last report. Cramps in hands and feet at intervals. Thirst great as ever. Breathing laborious. Half-past two.—Evidently improving. Has only had one stool since last report. Speaks with an effort. Pulse 116, feeble and irregular. Thermometer under tongue, mouth shut 90, open 84, stool just after voiding it, 86, axilla 90, room 57, face 82, and clammy. Give an enema of eight ounces starch immediately. Omit the wine, but continue the calomel. Clamminess of skin nearly gone. Pulse more distinct and regular. Desires tea. Has passed no urine since admission. Seven, P. M.—Improving. Pulse 108, easily compressible. Cramps, vomiting, and purging, nearly abated. Pain of hypochondrium. Apply the solution of cantharides to stomach.

Eight, A. M., next morning.—Has slept at intervals during the night. Sleep interrupted by frequent starts. Has had three stools, last one like well boiled sago. Mouth not affected by calomel. Continue the powders. Ten, A. M.—Has this moment voided urine three ounces, highly coloured. Continue the powders. Eight, P. M.—Countenance tranquil. Pulse natural. Skin warm. Tongue cold. No cramp. No urine made. Has had dejections, but not feculent. Calomel four grains, James' powder ten grains—take at bed-time, and a drachm of rhubarb and magnesia in the morning.

This case went on improving, and eventually got well, without any consecutive fever.

THIRD CASE.

John Dryden, ætatis 5.—Taken ill on Friday, January 7th, with vomiting and purging. Complained of pain in his belly. His mother says his stools resembled water-gruel. Sent to Mr. Cuthbert's in Sandgate, who sent her a bottle, but did not visit. Grew gradually worse of the vomiting, but the purging rather abated.—Admitted Jan. 10, at 11 A. M.—Extremities cold and rather livid—especially about the nails. Pulse at the wrist nearly extinct—countenance cadaverous—eyes half closed—of a ghastly expression, with a livid areola, and quite sunk in the head. Vomiting and purging still continue. Vomited matter greenish and transparent. Purged a gelatinous fluid with white flocculi suspended in it. Has had two enemata of warm water one lb., tincture of opium 20 drops. First rejected, second retained about an hour. Give a grain calomel every ten minutes. Warm arrow-root, combined with cinnamon, for drink. Continued vomiting and purging all day until 10 P. M. when an enema of thick arrow-root was given, which restrained purging, but vomiting continued and restlessness all night. Lies on his back with his arms spread out at right angles. Took small quantities of wine with the pills, during the night.

Jan. 12, 8 A. M.—Has slept none during the night. Shifts down in bed. Tossed his head from side to side. A slight frown upon the brow. Pupils rather dilated. Bowels not opened since enema. Nausea but no vomiting. Urine secreted this morning, first for 40 hours. Take three grains of calomel every hour.—Ten P. M.—No stool. Pulse 108, easily compressible—much in same state as morning. The cornea appears covered with an opaque secretion, resembling a spoiled gooseberry. Take one ounce of rhubarb mixture immediately, and afterwards two grains calomel every hour. No stool until eight A. M. when an injection was given of common salt, &c., which produced a dark green stool of a feculent smell.

Jan. 13.—Skin warm and dry. Pulse 100, feeble. Mouth not affected. Spirits of ammonia two drachms, syrup four drachms, water four ounces: to take half an ounce every hour, with the calomel.—10 P. M.—Surface of body cold.—Discharge from the eyes resembling purulent ophthalmia. Pupils do not contract readily. Blister to the temples.

Jan. 14, 8 A. M.—Profound coma. Bowels not acted. Discharge from the eyes increasing. No stool until an enema was given. Dark and rather feculent. Secretion of urine scanty.—11 P. M.—Appears sinking; body cool—lies on his back; with eyes half open. Pulse very feeble. Respiration difficult. Two drachms of red wine every fourth hour.

Jan. 15, 8 A. M.—Better—recognized his mother this morning. Has had an enema, which has produced one stool. Three grains calomel, three times daily 10 P. M.—Was nearly in the same state as on the night of the 14th—Commenced with the wine as before, and in the morning was considerably improved.

Jan. 16.—Continues improving. Bowels obstinate. Enema. Mixture of rhubarb and magnesia, three times daily. Convalescent.

Jan. 18.—Eruption about the elbows resembling scarlet fever. Pustule on the lower part of the cornea. Tongue rather furred.—Let him have a saline mixture and some antimonial wine.

Jan. 19.—Eruption has become pustular, resembling measles. Pustule on cornea healing. Continued to improve daily, though his bowels remained constipated.

Jan. 20.—Is now quite well.

NOTE G.—FIRST CASE.

Cases intended to show the result of Venesection in severe premonitory and other cases of Cholera.—Case in which bleeding is supposed to have done harm, hastening on the Collapse.

Jane Robson, ætatis 28, residing in Lambton Court, admitted into St. Andrew's Hospital, December 26. Eleven A. M.—She has had diarrhœa for three or four days past. She, however, went about as usual; was attacked this morn-

ing at seven o'clock with violent vomiting and purging, accompanied with vertigo and cramp of the legs. The practitioner who had seen her first at home gave her an emetic of salt and warm water, and after its operation a little laudanum in brandy and water. On admission, she was much exhausted; the face and hands were pale, with a perceptible bluish tint; the pulse quick and feeble, but distinct at the wrist; the extremities cold; the heat of the tongue and breath was also reduced; the other parts of the body were covered with a clammy moisture. On her admission she was immediately enveloped in warm blankets, and heat applied to the abdomen and extremities by dry friction, with warm hot flannels. Soon after she was received, she had a stool of the usual milky fluid, containing white flocculi. She complained of no pain but occasionally when the cramps of the legs supervened. Two tea-spoonfuls of mustard were now given to her in warm water, which produced copious vomiting, and she was most assiduously rubbed with the following liniment:—Make a liniment of four ounces spirit of turpentine, three ounces tincture of capsicum, and two drachms of camphor. The heat of the extremities and abdomen was considerably increased by continued friction. The pulse was very feeble and rapid. Warm coffee and balm tea were given at intervals, until one P. M., when she was bled to the extent of six ounces. To assist this operation, another mustard emetic was administered, which caused free vomiting, but in a very small degree assisted the bleeding. When the above quantity of blood had been drawn, the pulse became quite imperceptible in the wrist, and extremely feeble at the carotids—a cold sweat burst out all over the body. Immediately the hot air bath was applied which speedily raised the temperature of the skin to a very comfortable warmth. As soon as the bath was applied, a fresh set of blankets were warmed before the fire; thus, instantly as the bath and blankets then in use were removed by one nurse, the fresh blankets were applied over the patient by another. But the heat thus obtained was evanescent. At half-past two, afternoon, pulse at the wrist was 104, very feeble. Had now a scanty stool, similar to former. Immediately after the bleeding she had given to her two grains calomel, and was ordered to take every hour two spoonfuls of the following mixture:—Compound spirit of ammonia three drachms, ascetite of ammonia three drachms, laudanum sixty drops, water five ounces; mix. Balm tea and coffee to be continued. Three P. M.—Apply a blister to pit of stomach. Continue the medicines. Five P. M.—She complains of no pain from the blister, but appears fast sinking. The blister was removed, and a sinapism soaked with strongest hartshorn, was applied, but even this produced no effect. She continued to sink until half-past six P. M., when she died quietly.

In this case I consider that bleeding evidently did harm, hastening on the state of complete collapse.

SECOND CASE.

March 15, 9 o'clock, P. M. Agnes M'Phail, aged 16, of loose habits. Was attacked with bowel complaint and slight vomiting upon the 14th, about midday. When visited, had pale face, lips livid, ringing in the ears, deafness, cramps, and coldness over the whole body, particularly of the lower extremities, eyes sunk and surrounded with a livid areola, pulse 80 and very feeble, tongue white and cold, with papillæ seemingly enlarged. Take immediately sixteen ounces of blood from the arm. To have three drachms of mustard, and five ounces of water as an emetic, which was taken immediately. Half-past nine. Has vomited largely from the emetic, the last of which resembled meal and water—the blood just drawn of a grumous appearance, but the last few ounces, more florid. Take immediately six grains of calomel—apply sinapism to epigastrium. Ten P. M. Could not suffer the irritation of the sinapism more than six minutes. Eleven P. M. Heat and pulse improving. Has had a stool, copiously tinged with bile. Twelve midnight. The whole surface of the body is covered with profuse perspiration. Pulse 120, strong. Tongue moist. Take an ounce and a half castor oil; mixed with two ounces of peppermint water.

March 16, 2 o'clock, A. M. Has had two bilious stools since last report, also passed urine of a deep red colour; still perspiring; pulse 120; tongue moist. Twenty grains of calomel, three grains of opium, divide into six powders and

take one every hour. Four A. M. Is very restless, and tosses in bed to a great degree; considerable pain in epigastrium on pressure; has had a bilious stool; has been vomiting greatly a liquid resembling barley; pulse 120, compressible; tongue furred. Take an effervescent draught, with fifteen of gts. of tincture of capsicum; applied twenty-four leeches to epigastrium. Six A. M. has vomited the last draught, and still has nausea, and is very restless. Repeated the draught. Nine A. M. Has vomited some liquid, still of the rice-water appearance; has had an evacuation much of the same consistence as that vomited; pulse 120; tongue furred in middle, but clean at edges. Repeat the calomel without the opium. Four P. M. still very restless and inclined to vomit; complains of great pain of head, particularly about the temples; pulse 120, very weak. Applied to temples twenty-four leeches. Five P. M. Pain of head, she says, relieved, but not altogether gone; shaved the head and applied a blister. Six P. M. Scarcely any pain, but complains of thirst, and a great desire for cold water to drink; has had two stools, copiously tinged with bile; pulse 120; tongue furred. Eight P. M. Still vomits, and is very restless—complains of something in her stomach, which she compares to a burning coal, and longs in the greatest degree for cold water; still refuses to be cupped in the epigastrium; eyes now encircled with a livid areola; heat of body natural temperature; pulse 110, very weak; tongue furred. Give an enema of four pounds hot water, and two ounces of wine: also had an effervescent draught. Continue the calomel every half hour, and to have wine and water frequently. Twelve, midnight. Feels, she says, rather better; her countenance has become very shrivelled and anxious; areola round the eyes very much marked; temperature of the body pretty natural; pupils contracted; pulse 100, flutters occasionally; tongue furred.

March 17, 2 A. M. Breathing laborious; pulse imperceptible at wrists and carotids; the face assuming the cadaverous appearance. Half-past two A. M. Breathed her last in great agony.

THIRD CASE.

Edward Campbell, aged 20. Of spare habit, and says he is temperate. Was admitted to the Vennel Hospital, from Mrs. M'Neil's lodgings, Candlehouse Closs, at half past 8 o'clock, P. M. Complaining of pain of precordia, tinnitus aurium, and coldness of the extremities, with spasms, particularly in the lower extremities. Countenance anxious; voice a whisper; pulse nearly imperceptible at the wrist, and beating feebly at the carotids; tongue cold and moist; thirst insatiable. Reports that he came to Greenock three weeks ago, and remained in good health till the 18th current, when he was seized with diarrhoea, and with vomiting of a fluid resembling barley-water. Has used no medicine, and can assign no cause for the present illness. R. Three drachms mustard, two drachms salt, four pounds of tepid water, to be given as an emetic, in table-spoonfuls, till it operate freely as a vomit. To be bled to twelve ounces. Apply a sinapism to the epigastrium, and rub hands and legs with hot flannels. 10 P. M. Ten ounces of dark blood were removed, since which says he is somewhat relieved. Spasms almost gone. Uneasiness at precordia. Skin warmer and covered with moisture. Pulse perceptible at wrist, and 120. To have an enema, as soon as possible, of three ounces of whiskey and three pounds tepid water. 11 P. M. Has vomited once a fluid resembling gruel. Enema has been retained for fully half an hour. Sinapism on epigastrium causes great uneasiness. Pain of precordia continues. Hands cold. Skin very clammy. Pulse 112, very feeble. To have thirty drops laudanum, twenty drops hartshorn, and half an ounce peppermint water, to be taken immediately. After half an hour, to take twenty grains calomel and fifteen grains ginger. March 19, One A. M. Heat of skin more general, and covered with profuse perspiration. Voice much more distinct than at last report. Eyes sunk, pulse 120, stronger. Has had one stool mixed with flocculi. Repeat the calomel and enema, with oil of turpentine two drachms. Three A. M. Feels himself rather comfortable. Has voided no urine since admission. Enema retained. Heat natural. Pulse 148, small. Thirst much less. Five A. M. Reaction seems established. Heat of body much restored. Enema removed artificially. Voice improved. To have an ounce castor oil, and forty drops aromatic spirit of hartshorn. Seven A. M. Not so well as at last report. Skin more cold, pulse less perceptible; and is not tractable when spoken to.

Has had two stools nearly resembling starch in colour and consistence, which have some flakes of bile. To have three ounces brandy and an ounce of hot water. Repeat the enema. Eight A. M. Breathing extremely laborious. Hands cold. Whole body covered with cold perspiration. Eyes sunk in their sockets, and encircled by an areola. Half past Eight. Breathed his last.

Extract from a letter addressed by the Secretary of the Medical Board, Fort St. George, to the Superintending Surgeon, Ceded Districts:—

24th Oct. 1825.

“The Board observe that in your Memorandum to the Medical Officers at Bellary, you advise blood-letting when “admissible.” Experience has rather tended to lessen the confidence formerly entertained in respect to that remedy.—particularly in the low form of Cholera—and they have therefore directed me to transmit, for your perusal, the accompanying papers from Assistant-Surgeon Lister, exhibiting the result of his practice in Cholera; which they consider to be deserving of attention. The experience of Mr. Lister would appear to be conclusive against the practice of blood-letting in that form of the disease, but the Board have too often had occasion to remark, that the most opposite results are ascribed to the same cause by different medical officers, and by the same officer at different times.”

NOTE H.—FIRST CASE.

Four Cases and Dissections, showing the inflammatory origin of the disease.

March 10, 1832.—Margaret Blackly, aged twenty, an irregular living woman, admitted into the Vennel Hospital at Half-past nine o'clock, A. M., in the stage of collapse; eyes sunk, encircled with an areola; face, hands, and feet, cold as ice; and the whole body covered with a cold, clammy perspiration; purging and vomiting, and cramps of the legs: pulse imperceptible at the wrist, and very imperfectly to be felt in the carotids; breath cold. Had taken no medicine; says that she went to bed last night in perfect health, but had two glasses of whiskey and some beer in the course of the evening. That about one o'clock this morning was seized with purging and vomiting, with excruciating pain in the bowels, which continued to increase until the present hour. Mustard cataplasms to diaphragm and calves of the legs, and frictions applied to the feet with flannels. Half-past ten o'clock. With great difficulty obtained about eight ounces of blood from a large orifice in each arm, after having immersed the arm in hot water, and frequent pressure upwards from the wrist. Gave her three drams of mustard as an emetic; applied sinapism to epigastric region and calves of legs, and continued friction to hands and feet, with camphorated tincture of opium. 11 o'clock, A. M. Pulse perceptible at the wrist, but very irregular, feeble, and thready; beats 110. Complains of great pain. Applied sinapism to the region of the diaphragm. Had ten grains of calomel with half a grain of opium, and an enema of half a drachm tincture of opium. One drachm of tincture of valerian and one oz. tincture of cinnamon, with the same quantity of oil of turpentine, mixed in three pounds of tepid water. Twelve, noon. Feels greatly relieved since administration of injection, which has been retained fifteen minutes; when drawn off, it was mixed with flocculi resembling newly fallen snow dissolving in water. Repeated the calomel. One P. M. Is now very restless, and wishes the frictions to be given over. Pulse 106, very feeble. Two P. M. Pulse is now gone, and she is evidently sinking; though she has had six ounces of brandy with hot water and sugar, which has not been vomited. Three P. M. Is very restless; much vomiting; countenance shrivelled and very livid; hands corrugated and blue; and has great jactitation of extremities. Half-past Three P. M. Expired calmly.

Post Mortem Examination Ten Hours after Death.—Examination of Margaret Blackly's Body. On opening the chest and abdomen, the omentum exhibited no unnatural appearance; the mesenteric veins were in a state of complete congestion; the stomach contained from two to three pounds of the same veal soup like fluid as had been vomited during life; the internal and peritoeal linings were very pale and bloodless, and in several parts there were vascular patches; the duodenum contained a quantity of the same turbid fluid which the whole canal was less or more filled with; the lining of the pylorus was unusually pale, but there

were a few gangrenous patches on it; a considerable quantity of pearly coloured mucous was found covering the lining membrane of the intestines; submuriate of mercury was blended intimately with this mucous, which produced the appearance of black-wash, proving, perhaps, that lime was present. Super-carbonate of soda was mixed with another portion of it, but no effervescence took place. Spleen much darker than natural, and more engorged with black blood; liver pale, of a mottled appearance, and much softer than natural; gall bladder about two-thirds full of a very dark green bile; gall ducts not closed or filled up, so that bile could be pressed out of the bladder with ease; lungs were of a dark mottled appearance. Left lung of a dark buff colour, and highly congested,—right lung extremely dark and gorged with grumous black blood; heart appeared of natural size,—both right and left ventricle contained about two ounces of coagulated black blood, both ventricles were also distended with the same impure blood, particularly the right; kidney was pale and bloodless; bladder entirely empty, and contracted to a great degree. A number of gangrenous patches in the lining membrane of bladder.

Post Mortem Temperature:—Apartment, 58 Fahrenheit—*Temperature of the Body*—Half-past 3 o'clock, 82—half past 4, 90—5, 92—6, 96—half past 6, 96—7, 90.

SECOND CASE.

Walter Howeiston was admitted into the Vennel Hospital on the 21st March at half-past nine, A.M., in a complete state of collapse, and died at two, P.M., the same day, after energetic treatment by enemata, calomel, opium, and latterly, a tobacco injection.

Examination after Death.—Lungs seemed healthy; heart of usual size, and contained two or three ounces of grumous blood in each auricle; liver paler than natural; gall bladder full of bile, and easily discharged; spleen healthy; stomach contained a great quantity of fluid resembling dish water. Towards the pylorus, in the inner membrane of the stomach, there were several patches, approaching to gangrene; duodenum much injected; much glary fluid adhering to the whole inner coat of the bowels; kidneys pale, and the left contained pus; bladder firmly contracted; no urine; gangrenous patches at the fundus of the stomach; did not examine the brain.

THIRD CASE.

Robert Forfar, ætatis 12, idiot. Epilepsy since three years old. Was in the habit of eating coals and any other dirt. Had purging three days previous to attack. Was seized on Sunday morning, Jan. 22, at three o'clock, with both vomiting and purging, but no cramps. Visited at 12 o'clock—found the patient labouring under well marked symptoms of Cholera, and quite cold. Enema of warm starch, one pound, tincture of opium three drachms.

Monday.—Much in same state, though he looked better. Still cold, but not so livid. Continue medicine and hot applications.

Tuesday.—Continued in same state until 4 P.M., when the surface of his body became warmer, which continued until his death, which took place at 9 P.M. The patient was warmer two hours before death than he was two days before. Had a purging enema at two o'clock this day, which produced a bilious stool with a long round worm in it. No urine was secreted or voided since three o'clock on Sunday morning.

Examination of Robert Forfar's Body, 25th Jan. 1832.—Sixteen hours dead. No offensive odour. The surface of the body leaden hue. Belly hollow. Reddish ecchymosis of the limbs. Pupil nearly natural. No difference in the colour of the muscles or fat. On laying back the sternum the internal mammary artery and veins were displayed. The blood in the artery certainly lighter red than in the vein, not more tumid than natural. Very collapsed lungs. No fluid in the chest. Upper surface of the liver darker than natural, but posterior natural. Gall bladder very turgid. All the bowels much injected with blood except the colon. The *Neurilema* of the pneumogastric nerves bright red and injected. Right side of the heart relaxed, left contracted. Spleen natural. The injection of the intestines is very minute, exceedingly distinct and arborescent. Some grumous blood in the right ventricle. There is also some blood in the left ventricle, which is more coagulated. Internal texture of the liver natural. Blood in the stomach

dark brown, the villi injected, (and Mr. Earle of London, who is present, says that in some parts of the stomach it is exactly like the stomachs of those who die of hydrophobia,) corrugated in a peculiar way, more particularly about the rugæ. This dark fluid adheres tenaciously to the coats of the stomach, and through the whole line of the intestines, except the colon. At the commencement of the jejunum an indurated superficial ulcer, size of a sixpence. About half a table-spoonful of urine in bladder. Several large dead lumbrici. Kidney natural, but darkish.

Chemical examination of Urine taken from the bladder on Wednesday, during the post mortem examination.—Was acid, and if it contained urea at all, it contained it in a very minute quantity.

Examination of the Bile.—Ten grains dried at a heat of 140, calcined, left one grain. Distilled water poured on this and heated, slightly restored reddened litmus.

Blood.—A quantity of blood was collected from the heart. It was gelatinous, but the greater part appeared to have remained fluid. The whole collected was dried at a heat of 140. The mass after exsiccation weighed 200 grains, which, by exposure in a crucible to a red heat for two hours, was reduced to two grains. Boiling distilled water was poured on these, till nothing more was dissolved. The insoluble mass weighed one and three-fourth grains. Hence 200 grains of this blood dried at 140, only contained one fourth grain of salts soluble in water. These consisted of an alkaline carbonate, muriate and sulphate of soda. The following experiments with this aqueous solution show—1st, Turmeric paper was not reddened, but the blue colour of litmus reddened by an acid was very gradually restored. 2d, Muriate of silver a copious precipitate, insoluble in nitric acid. 3d, Nitrate of barytes a copious precipitate, insoluble in nitric acid.

A young friend who accompanied me to Newcastle, and who has been for several years much engaged in the investigations of animal chemistry, has communicated to me the following as the result of his inquiries:—

1st, In the fluid vomited which you brought from Newburn, there was neither free acid nor free alkali, nor albumen. It, however, contained a peculiar animal matter, for when it was slowly evaporated at a low heat, a yellowish brown extract remained, resembling in appearance that of urine. Its chemical properties were, however, wholly dissimilar, as it contained no urea, or matter capable of causing a precipitate with the tincture of galls.

2d, The alkaline muriates and phosphates appeared to be present in the clear fluid. The insoluble rice-looking matter was not sufficiently examined to speak with confidence of its nature. Blood taken from the heart of a blue collapse patient was not materially altered in any of its chemical properties. It reddened by immersion in saline solutions immediately, but scarcely at all by exposure to the air. This has been the case with the blood I have examined in three other bad cases of the disease. The saline matter of the blood appeared, by examination, to be greatly diminished in quantity.

The bile appeared wholly unchanged in its chemical properties. Its physical properties were also the same as usual.

The child's dejection sent to you by Mr. Frost, consisted of a dilute solution of albumen. It reddened turmeric paper strongly. Solution of the by-chloride of mercury dropped into it, and the mixture heated, a copious precipitate fell. The same result obtained with nitric and muriatic acids in a slighter degree. These remarks only apply to the fluid part of it. The rice-like sediment was not examined.

P. S.—The Gall duct of Forfar's case was found completely impervious.

FOURTH CASE.

From the Case-Book of Vennel Hospital.

Feb. 1832. Malcolm M'Millan, aged 13, employed constantly in his father's pilot-boat, was brought to the Hospital in a state of collapse. His extremities cold and blue; no pulsation to be felt at the wrist, temples, or carotids; face and lips very cold; countenance dull; eyes suffused; eyelids sluggish; tongue soft, clean, cold; voice very feeble, and said by his friends to be completely altered; is rational and drowsy; complains of pain at and below the navel, which is not

increased on pressure. Half-past three. Has had an evacuation of about three ounces of a light brown coloured fluid, resembling boiled oatmeal gruel, and of a slightly feculent smell. Four o'clock. Apply a mustard poultice to feet; has more heat in his body and extremities; pulse perceptible at the wrist, 108; has some thirst; to have four grains of calomel, and a small quantity of brandy and water. Quarter past five. Symptoms much the same; repeat the calomel. Six o'clock. Pulse imperceptible; had a little brandy and water. Quarter to seven. Pulse perceptible; repeat the calomel. Half past seven. Pulse very feeble, 116; delirious. Half-past eight. Repeat the calomel. Nine, P. M. Pulse imperceptible; skin colder; face pale; eyes more sunken; repeated the brandy and water; injected an enema of three pounds of water, as hot as the hand could bear, to which add an ounce and half of spirits of wine. Ten, P. M. Face bedewed with cold clammy perspiration; pulse still imperceptible; extremities warmer; has retained the enema; repeated calomel and diluted alcohol. Eleven. Withdrew the enema and injected another, with three pounds of water and two ounces of brandy, and one drachm of laudanum. Twelve. Continue medicine; pulse 134. Half-past twelve. Pulse imperceptible; extremities rather cold; eyes suffused. Dr. Kirk now pronounces the case incurable, from the state in which he finds the brain. One, A. M. Reparations 34 in a minute, oppressed; pulse imperceptible at carotid; chest labouring; heat not increased; much low moaning, of the most piteous description. Had two drachms of alcohol in a little cold water a few minutes since. Quarter past one. Countenance is indescribably dark, sunk and cadaverous; no evacuations or vomiting. Twenty minutes past one. Breathed his last.

Examination of M. M'Millan's body Twelve Hours after Death.—Ecchymosis of the lower limbs and outside of arms; abdominal viscera immensely injected, as in high inflammation; lungs collapsed; blood fluid; coagulable lymph filling the whole right ventricle as a polypus, and a small polypus in the left; the various ganglia highly injected and reddened: bladder empty, corrugated, and injected; internal membrane of the bladder highly injected, like acute inflammation; heat of the apartment 58; thermometer in the bowels 89; internal membrane of bowels injected highly; glary matter like dirty mucous lining the whole cavity of the stomach and ileum; spleen turgid; considerable quantities of pus in pelvis of kidney, and whole substance containing more blood than natural; gall bladder distended; the longitudinal sinus of the brain containing in its whole length a polypus, like a white worm, very firm in texture; membrane of brain highly injected.

Post Mortem Temperature of the Skin.—Half-past 1 o'clock, 92—2, 92—half-past 2, 96—3, half-past 3, 96—4, 90.

NOTE I.

Sketch of the Practice of three eminent and excellent Practitioners of Newcastle.

I shall now lay before the public a short summary of what I understood to be the treatment of this disease, by a very eminent and excellent practical surgeon, Mr. John Fyfe, of Newcastle. At the time I was in Newcastle, he had attended 579 cases of Cholera; and in all these, he says that collapse never came on till after profuse serous discharge from the bowels. Mr. Fife relies very much on stimulating enemata; and he says that they seldom fail to produce reaction in its most salutary form, attended by less congestion than that which followed collapse of longer duration, in which stimuli had been withheld, or when the most diffusible stimuli had been given by the mouth. When watery diarrhœa exists, tinged with healthy secretions, he has arrested it often at once by opium; and in nineteen cases out of twenty, convalescence has followed. But if the disease has advanced, he then gave repeated doses of calomel: moderated the discharges by opium, and softened the pulse by bleeding, if necessary. If the disease proceeds to vomiting, purging, and cramp, Mr. Fyfe prescribes a mustard emetic, followed by copious draughts of warm water, friction, and the proper regulation of heat. If the pulse is firm, blood is taken to the extent the pulse can bear. Calomel and opium are then used, and diluents allowed. In collapse, Mr. Fyfe objects to large opiates, and also to general bleeding; but, in general, he gives relief by throwing into the intestines three pounds very hot water, six ounces of brandy

and occasionally, two drachms of laudanum. It will be frequently necessary to withdraw these injections by a tube—they come off cold—and to repeat them either with hot water alone, or with laudanum, if the irritability of the stomach continues. In this stage Mr. Fyfe uses brandy liberally. He treats the reactive fever in the same way Mr. Frost does, as stated below, and I have already alluded to some of his ingenious adaptations in my report. Mr. Fyfe thinks the period of the incubation of the morbid germ of Cholera seems to vary from four hours to eight days. Mr. Fyfe is also of opinion that the effluvia, from the excretions of an individual having diarrhœa cholERICA, may communicate to another predisposed the most developed form of the disease.

Mr. Frost, of Newcastle, treated 500 cases of Cholera, and is a person of high qualifications, a calm thinker, and an excellent practitioner. I think the profession will be glad to hear his opinion and practice in the disease, which I will give as accurately as I can recollect a conversation held with that gentleman at Newburn. He said that he conceived it a malignant congestive fever,—and if English physicians had seen this disease without reading Barry, Bell, Orton, and Lefevre, they would have treated it on scientific principles, and according to the rules of British art. They would have given no astringents. The catch-word of ‘stop the diarrhœa’ would never have existed. He stopped it, but in a far different method, viz., by calomel, castor oil, and very minute doses of opium; say five grains calomel, one opium, and two antimonial powder to begin with, several times repeated. If there is head-ache, and giddiness, and the pulse is of sufficient tone at the commencement,—if the pulse is from eighty to a hundred, bleed moderately. But the bleeding must be cautious; for in this, as in all cases of intestinal irritation, bleeding cannot be largely practised with safety. If the stomach is much loaded, or there is nausea, give a draught of warm water to excite vomiting. If that does not effect it, you may give salt and water, or ipecacuan, or a dose of castor oil, which may be succeeded by a diaphoretic. This will open the skin. Next day calomel and castor oil again. If the castor oil will not stay on the stomach, the best substitute is magnesia and rhubarb. If the patient gets colder, then fill the large intestines with warm water from the forcing pump; and if you have any idea that the bowels are not discharged, then put salt in the water. After this invariable stage of diarrhœa comes that of collapse. In every case where correct information could be obtained, diarrhœa has preceded it. He gives warm water to induce vomiting; injections of hot water; the careful regulation of heat; twenty drops of laudanum to allay irritation; two grains of calomel, and one-sixth of a grain of opium, every three hours, for three times, and then castor oil. In one case, for instance, under this treatment, the pulse rose to eighty, and the patient became warm. Eight ounces of blood were taken from the arm. He passed no urine for 48 hours. Mr. Frost went on with the calomel, and next day the urine returned, and he recovered after a mild consecutive fever. He has never practised stimulation. The consecutive fever of children is almost always attended with the same symptoms as hydrocephalus acutus. The hydrargyrus cum creta is the best remedy for them. He has seldom been able to induce ptialism. Worms are very frequently vomited. They are always dead. The injecta of Cholera seem poisonous to them. At Newburn, a village where Mr. Frost conducted a great part of the practice, two hundred and seventy-three cases of the disease occurred up till the day on which I visited Newburn with Mr. Frost. Fifty of these cases were fatal. The whole inhabitants of the village were five hundred and fifty, one hundred and forty-one families, and one hundred and thirty-four houses. This is truly appalling. In general, even when the cold stage is incomplete, consecutive fever sets in—there is much giddiness, pain of the head, and stupor. He has always treated this stage with laxatives. Mustard sinapisms applied to the neck, relieve the head; to the epigastrium, the stomach. They have often been costive, but it has not been difficult to manage the bowels. Leeching to the head was frequently resorted to. Now, I ask the reader to compare the success of this treatment with that in the village of Hartly, where brandy and opium were used, and where, out of *thirty-four cases, thirty-two died*.

I beg now to give the experience in this disease of an excellent friend, Mr. D. M’Allum. His acuteness and talent are only equalled by the excellence of his heart and the soundness of his principles.

Dear Sir,—Imperfect as naturally must be, from my limited opportunities, my capability of replying to your queries respecting Cholera; yet so far as my in-

formation can contribute, in the slightest degree, towards the furtherance of your laudable object, I am happy to afford it.

In looking over the list of queries proposed, I do not see that my individual experience can afford any information worth recording, but upon the last, viz., the treatment found most successful. In reference to treatment, I would divide this disease into three stages. 1st, That of excitement, or irritation, wherein the patient throws or purges freely, generally accompanied by severe spasmodic action of the muscles of the legs and bowels: the pulse distinctly perceptible, quick, sharp, and, in some subjects, full. This stage does not last beyond a few hours, passing on to, 2dly, The stage of collapse; wherein the pulse becomes imperceptible, the extremities cold, the breathing more laborious, the countenance more sunk, especially the eye, which assumes a leaden hue; and, 3dly, the stage of reaction. He who is happy enough to be called in during the first stage, will not hesitate, if the patient have any vigour of constitution, to bleed freely, premising, or using simultaneously, a gentle emetic of ipecacuanha, or salt and water, following this by an anodyne injection. I then administer a pill of two grains of calomel, and one-sixth of a grain of opium, every half hour, with chalk mixture, or saline julap, in a state of effervescence for a few hours, until we have dejections evidently combined with bile. To assist this operation, and especially if the vomiting be still severe, I administer warm emollient injections, and afterwards treat as in ordinary continued fever. In this stage of collapse, or approaching to it, I give a teaspoonful of mustard in a little warm water, every five minutes, till I produce vomiting; at the same moment I order enemata of very warm water and soap, without reference to quantity, endeavouring to throw up as much as ever I can. These means I find more successful in restoring heat than any *external* means; but which I do not, nevertheless, neglect, ordering hot applications to the feet, hands, and arm-pits, and that the patient be well rubbed with a stimulating liniment of spirits of turpentine, tincture of capsicum, mixed with camphorated oil; I then apply the hot air, both which I continue at a temperature about 84, for two hours or more. In the mean time, as soon as the emetic has operated, I give six grains calomel, one-fourth of a grain of opium, every quarter of an hour, with two table-spoonfuls of a mixture containing compound spirit of ammonia three drachms, spirits of mīndererus three drachms, mixed with hot coffee, giving warm liquids very freely and frequently. In this stage I have tried bleeding repeatedly, but without benefit; indeed, it seemed to me to precipitate the fate of the patient. The enemata ought to be repeated frequently until reaction takes place. The third stage, viz., of reaction requires no difference of treatment from that of our usual typhus mitior, excepting that bleeding should be had recourse to with *very great caution*, as I believe, by its too free use in improper cases, the stage of collapse has returned, and the patient sunk. There is generally a tendency to congestion, either of the brain or liver, which requires the application of leeches and blisters. The mortality in my own practice was during the first three weeks—exactly two to one recovered,—but since January commenced I have had seven cases, most of them applying early—six of them are convalescing, and one dead. In Wallsend township, amid a population of 3000, there have hitherto occurred 15 cases and 4 deaths.

In the above observations I have merely referred to my own individual practice, and its results. Although I have had three patients in one house, I have met with no fact that could confirm the doctrine of contagion.

Yours, respectfully,

D. M'ALLUM.

Blackett Square, Saturday, Jan. 14th, 1832.

THE END.

